

#8 / Seq / B

RECEIVED

APR 11 2002

TECH CENTER 1600/2900

SEQUENCE LISTING

<110> Ausubel, Frederick M.  
Rahme, Laurence G.

<120> VIRULENCE-ASSOCIATED NUCLEIC ACID  
SEQUENCES AND USES THEREOF

<130> 00786/361003

<140> US 09/975,719

<141> 2001-10-10

<150> US 09/199,637

<151> 1998-11-25

<150> US 60/066,517

<151> 1997-11-25

<160> 437

<170> FastSEQ for Windows Version 4.0

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<211> 42235

<212> DNA

<213> Pseudomonas aeruginosa

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<221> variation

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<223> N is any nucleic acid.

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<211> 306

<212> DNA

<213> *Pseudomonas aeruginosa*

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<211> 101

<212> PRT

<213> *Pseudomonas aeruginosa*

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 <213> *Pseudomonas aeruginosa*

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 <213> *Pseudomonas aeruginosa*

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                     35                    40                    45  
 Thr Asn Ser Asn Ser Ala Leu Asn Ser Ile Leu Ser Gly Gly Val Ser  
   50                    55                    60  
 Asp Ile Arg Gln Trp Met Asn Lys Leu Tyr Gly Glu Ala Phe Ala Ala  
 65                    70                    75                    80  
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 <212> PRT  
 <213> *Pseudomonas aeruginosa*

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35          40          45
Pro Trp Gly Ser Ile Ser Ser Leu Leu Val Glu His Ala Ala Arg Val
50          55          60
Ser Ala Gln Ala Arg Pro Ala Gln Arg Arg Arg Gly Leu Val Gln
65          70          75          80
Val Cys Cys Cys Met Ser Gly Ser Arg Ala Val Ile Asp Leu Ala Ala
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Leu Glu Phe Ile Val Asp Arg Gln Leu Leu Ile Glu Met His Cys Asp
100         105         110
Pro Arg Thr Trp Leu His Val Asp Gly Gly Glu Gly Leu Pro Val Gln
115         120         125
Leu Val His Pro Leu Pro Asp Val Ala Asp Ala Ala Gly Glu Asp Ala
130         135         140
Val Glu Gly Arg Val Ala Val Gly Ser Gly Arg Pro Glu Ala Gly Ala
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 <213> *Pseudomonas aeruginosa*

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 65 70 75 80  
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 85 90 95  
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 115 120 125  
 Ala Asp Tyr Thr Arg Thr Ala Ser Asn Glu Ile His Ser Gln Phe Lys  
 130 135 140  
 Arg Leu Pro Asn Pro Asp Leu Val Met Tyr Val Phe Pro His Leu Ala  
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 ggcattcctgc tgcggatcga ttgggcgccg cagcgtttgc ctggcatcga ggagcagccg 720  
 gccacggctg ttgcctatcg agctggtcgc acctcgctcc cagacgtcga gcatgttggc 780  
 ctgcgcgtgg ggcagcatct cctccttgct ggtggagcac gctgccaggg tcagcgcgca 840  
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 ctccagagct gtaatcgacc ttgcggccct tga 933

<210> 11  
 <211> 310  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 11  
 Ser Arg Pro Gly Arg Arg Thr Gly Gln Ser Arg Val Arg Phe Arg Ala  
 1 5 10 15  
 Arg Arg Arg Ser Ser Ala Gly Leu Leu Ser Met Arg Pro Gly Arg Ser



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tcgcgcatgg gcggacagga gatcaggaac tggttgatcc gctggttcaa cccgcacccg 1020
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gacgaaccga tcctgcagga tgaattgccca ctggccgacg gcaactgact ctcccagaac 1140
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<210> 13  
 <211> 1046  
 <212> PRT  
 <213> Pseudomonas aeruginosa

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<400> 13
Pro Gly Arg Leu His Pro His Gly Gln Gln Arg Asp Pro Gln Ser Val
1          5          10          15
Gln Thr Thr Ala Gln Ser Arg Pro Gly Asp Val Cys Val Pro Ala Pro
20          25          30
Gly Arg Gln Arg Ser Arg Pro Gly Thr Gly Leu His His Arg Val Pro
35          40          45
Leu Leu Pro Ala Ser Pro Val Arg His Ala Gly Arg Thr His Gly Gly
50          55          60
Leu Leu Met Gly Phe Phe Gln Thr Leu Leu Arg Gly Arg Thr Gln Pro
65          70          75          80
Gln Ser Val Pro Ala Asp Ala Pro Glu Asp Ser Gly Ala Leu Asp Val
85          90          95
Ala Ala Ala Glu Glu Ala Thr Glu Arg Tyr Leu Ala Arg Leu Ala Ala

```



Arg Thr Thr Gly Thr Gly His Pro Gly Phe Thr Leu Phe Asn Arg Gly  
 580 585 590  
 Gly Ala Pro Leu Thr Phe Asp Pro Phe Asn Lys Leu Asp Arg Gln Met  
 595 600 605  
 Asn Ala His Gly Phe Ile Phe Gly Pro Thr Gly Ser Gly Lys Ser Ala  
 610 615 620  
 Ser Leu Thr Asn Leu Ile Cys Gln Met Leu Ala Met Tyr Leu Pro Arg  
 625 630 635 640  
 Met Phe Val Ala Glu Ala Gly Asn Ser Phe Gly Leu Leu Ala Asp Leu  
 645 650 655  
 Ala Lys Arg Phe Gly Leu Ser Val His Arg Val Arg Leu Ala Pro Gly  
 660 665 670  
 Ser Gly Val Ser Leu Ala Pro Phe Ala Asp Ala Ile Lys Leu Val Glu  
 675 680 685  
 Ser Pro Asp Gln Val Lys Val Leu Asp Ala Glu Asp Ile Glu Ala Ser  
 690 695 700  
 Asp Ser Val Gln Gly Ser Lys Ala Asp Leu Glu Asp Asp Gln Arg Asp  
 705 710 715 720  
 Ile Leu Gly Glu Met Glu Ile Val Ala Arg Leu Met Ile Thr Gly Gly  
 725 730 735  
 Glu Glu Lys Glu Asp Ala Arg Leu Thr Arg Ala Asp Arg Ser Ala Val  
 740 745 750  
 Arg Gln Ala Ile Leu Ala Ala Ala Arg Thr Cys Ala Ala Ala Asn Arg  
 755 760 765  
 Thr Val Leu Thr Gln Asp Val Arg Asp Ala Leu Tyr Glu Ala Ser Arg  
 770 775 780  
 Ser Asp Ser Thr Ala Pro Glu Arg Arg Ala Arg Ile Ala Glu Met Ala  
 785 790 795 800  
 Glu Ala Met Gln Met Phe Cys Met Gly Ala Asp Gly Glu Met Phe Asn  
 805 810 815  
 Arg Glu Gly Thr Pro Trp Pro Glu Ala Asp Leu Thr Val Val Asp Phe  
 820 825 830  
 Ala Thr Tyr Ala Arg Glu Gly Tyr Ala Ala Gln Leu Gly Ile Ala Tyr  
 835 840 845  
 Ile Ser Leu Leu Asn Thr Val Asn Asn Ile Ala Glu Arg Asp Gln Phe  
 850 855 860  
 Lys Gly Arg Pro Ile Val Lys Ile Thr Asp Glu Gly His Ile Ile Thr  
 865 870 875 880  
 Lys His Pro Leu Leu Leu Pro Tyr Ala Met Lys Ile Thr Lys Met Trp  
 885 890 895  
 Arg Lys Leu Gly Ala Trp Phe Trp Leu Ala Thr Gln Asn Ile Asp Asp  
 900 905 910  
 Ile Pro Ala Ser Gly Ala Pro Met Leu Asn Met Ile Glu Trp Trp Leu  
 915 920 925  
 Cys Leu Asn Met Pro Pro Asp Glu Val Glu Lys Ile Ser Arg Phe Arg  
 930 935 940  
 Glu Leu Ser Pro Ala Gln Lys Ser Met Met Leu Ser Ala Arg Lys Glu  
 945 950 955 960  
 Ser Gly Lys Phe Thr Glu Gly Val Leu Leu Ala Lys Gly Lys Glu Tyr  
 965 970 975  
 Leu Val Arg Val Val Pro Pro Ser Leu Tyr Leu Ala Leu Ala Met Thr  
 980 985 990  
 Glu Asn Glu Glu Lys Asn Gln Arg Tyr Asn Ile Met Gln Ala Thr Gly  
 995 1000 1005  
 Cys Asp Glu Leu Glu Ala Ala Leu Gln Val Ala Ala Asp Leu Asp Lys  
 1010 1015 1020  
 Ala Arg Gly Leu Pro Pro Phe Pro Ile Val Phe Pro Asp Gln Pro Ala  
 1025 1030 1035 104  
 Val Glu Cys Gln Asp Glu

<210> 14  
 <211> 657  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 14  
 gtacctgccc gacgagcaag tgatgctcct ggaggatggg cgttcgcgcg ccgcattctt 60  
 cgaactgggtg cccttgggca ccgagggccg cgatcccaat tggatgcaga acgcccggga 120  
 cgcattgaaa gaagccctgc agaactcctt cgacgagcac gaaacctcac cctggattgt 180  
 ccagttctac gcccaggacg agatcagctg ggacaatttc caggagcagt tgaggcagta 240  
 cgtccatcct cgagcgcgag gatcggcctt cagcgagatg tacctggcgc tcatgaagca 300  
 tcacctggag ggcatttcga agccgggcgg actgttcgtc gacaccgccg tcagcaagct 360  
 gccctggcga ggacaacagc gccgcgtgcg gatggtcgtc taccgccgga tccgcaaggga 420  
 ggatgcgcag attcgcggac aggacccggc gccgtacctg aaatccatct gcgagcgtat 480  
 ccaaggcggc ctggcgaaac cccggcatcgt cgcttcgcgc atgggcggac aggagatcag 540  
 gaactggttg atccgctggt tcaacccgca cccggatcac ctccggccagg ccgagggcga 600  
 cctacgtcgc ttctacgaac tggtatgccg tccggacgaa ccgatcctgc aggatga 657

<210> 15  
 <211> 218  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 15  
 Val Pro Ala Arg Arg Ala Ser Asp Ala Pro Gly Gly Trp Ala Phe Ala  
 1 5 10 15  
 Arg Arg Ile Leu Arg Thr Gly Ala Leu Gly His Arg Gly Pro Arg Ser  
 20 25 30  
 Gln Leu Asp Ala Glu Arg Pro Gly Arg Ile Glu Arg Ser Pro Ala Glu  
 35 40 45  
 Leu Leu Arg Arg Ala Arg Asn Leu Thr Leu Asp Cys Pro Val Leu Arg  
 50 55 60  
 Pro Gly Arg Asp Gln Leu Gly Gln Phe Pro Gly Ala Val Glu Ala Val  
 65 70 75 80  
 Arg Pro Ser Ser Ser Ala Arg Ile Gly Leu Gln Arg Asp Val Pro Gly  
 85 90 95  
 Ala His Glu Ala Ser Pro Gly Gly His Phe Glu Ala Gly Arg Thr Val  
 100 105 110  
 Arg Arg His Arg Arg Gln Gln Ala Ala Leu Ala Arg Thr Thr Ala Pro  
 115 120 125  
 Arg Ala Asp Gly Arg Leu Pro Pro Asp Pro Gln Gly Gly Cys Ala Asp  
 130 135 140  
 Ser Arg Thr Gly Pro Gly Gly Val Pro Glu Ile His Leu Arg Ala Tyr  
 145 150 155 160  
 Pro Arg Arg Pro Gly Glu Arg Arg His Arg Arg Phe Ala His Gly Arg  
 165 170 175  
 Thr Gly Asp Gln Glu Leu Val Asp Pro Leu Val Gln Pro Ala Pro Gly  
 180 185 190  
 Ser Pro Arg Pro Gly Arg Gly Gly Pro Thr Ser Leu Leu Arg Thr Gly  
 195 200 205  
 Met Pro Ser Gly Arg Thr Asp Pro Ala Gly  
 210 215

<210> 16  
 <211> 435

<212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 16  
 gtccgcctcg gcctggccga ggtgatccgg gtgcggggtg aaccagcgga tcaaccagtt 60  
 cctgatctcc tgtccgcca tgcgcgaagc gacgatgccg gcgttcgcca ggccgccttg 120  
 gatacgtcgc cagatggatt tcaggtacgc cgccgggtcc tgtccgcgaa tctgcgcac 180  
 ctcccttgcgg atccggcggg agacgaccat ccgcacgcgg cgctgttgct ctcgccaggg 240  
 cagcttgctg acggcgggtg cgacgaacag tccgcccggc ttcgaaatgc cctccagggtg 300  
 atgcttcatg agcgccagggt acatctcgtc gaaggccgat cctcgcgctc gaggatggac 360  
 gtactgcctc aactgctcct ggaaattgtc ccagctgatc tcgtcctggg cgtagaactg 420  
 gacaatccag ggtga 435

<210> 17  
 <211> 144  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 17  
 Val Arg Leu Gly Leu Ala Glu Val Ile Arg Val Arg Val Glu Pro Ala  
 1 5 10 15  
 Asp Gln Pro Val Pro Asp Leu Leu Ser Ala His Ala Arg Ser Asp Asp  
 20 25 30  
 Ala Gly Val Arg Gln Ala Ala Leu Asp Thr Leu Ala Asp Gly Phe Gln  
 35 40 45  
 Val Arg Arg Arg Val Leu Ser Ala Asn Leu Arg Ile Leu Leu Ala Asp  
 50 55 60  
 Pro Ala Val Asp Asp His Pro His Ala Ala Leu Leu Ser Ser Pro Gly  
 65 70 75 80  
 Gln Leu Ala Asp Gly Gly Val Asp Glu Gln Ser Ala Arg Leu Arg Asn  
 85 90 95  
 Ala Leu Gln Val Met Leu His Glu Arg Gln Val His Leu Ala Glu Gly  
 100 105 110  
 Arg Ser Ser Arg Ser Arg Met Asp Val Leu Pro Gln Leu Leu Leu Glu  
 115 120 125  
 Ile Val Pro Ala Asp Leu Val Leu Gly Val Glu Leu Asp Asn Pro Gly  
 130 135 140

<210> 18  
 <211> 588  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 18  
 ggggagccag cgcaggtagc tgttcagcgg tccgacttcg ttctgcgggt cgaccggcac 60  
 caggccggcg ccgagcagta cgttgctcag ggtgatgcag cgttcctcca actgggtatg 120  
 gtcgcggccg cgcacgaaca gagcgatcgc tccgcgatag agcttggtgct cccggccgat 180  
 caggcgctga acgggtggcca cgtcctcgcg ggtgtggatc gaggcctggg tgtcaccaac 240  
 ggcctttttc gagagctgct gcagatgcc ttccagcatg tcctgcggcg tcacgaccat 300  
 ggtgatgcac agcagcgtgt cctcgggcat tcgatcgaac agggcggtga ggccatcgcc 360  
 tttgagcgtc tcgccggtga agtggcctgt cagcggcgct ttgttcaact ggtcgaccac 420  
 aatcactcgg tcgggcatgg catcgaagag ccatacgccc tgggtggcat cggaacagg 480  
 ctgccgatg aacaggttct gggagaagtc agtgccgtcg gccagtggca attcatcctg 540  
 caggatcggg tcgtccggac ggcataccag ttcgtagaag cgacgtag 588

<210> 19  
 <211> 195  
 <212> PRT

<213> Pseudomonas aeruginosa

<400> 19

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Gly Glu Pro Ala Gln Val Ala Val Gln Arg Ser Asp Phe Val Leu Arg
 1          5          10          15
Phe Asp Arg His Gln Ala Gly Ala Glu Gln Tyr Val Ala Gln Gly Asp
 20          25          30
Ala Ala Phe Leu Gln Leu Gly Met Val Ala Ala Ala His Glu Gln Ser
 35          40          45
Asp Arg Ser Ala Ile Glu Leu Val Leu Pro Ala Asp Gln Ala Ser Asn
 50          55          60
Gly Gly His Val Leu Ala Gly Val Asp Arg Gly Leu Gly Val Thr Asn
 65          70          75          80
Gly Leu Phe Arg Glu Leu Leu Gln Met Pro Phe Gln His Val Leu Arg
 85          90          95
Arg His Asp His Gly Asp Ala Gln Gln Arg Val Leu Gly His Ser Ile
100          105          110
Glu Gln Gly Val Glu Ala Ile Ala Phe Glu Arg Leu Ala Gly Glu Val
115          120          125
Ala Cys Gln Arg Arg Phe Val Gln Leu Val Asp His Asn His Ser Val
130          135          140
Arg His Gly Ile Glu Glu Pro Tyr Ala Leu Gly Gly Ile Gly Asn Arg
145          150          155          160
Leu Pro Ile Glu Gln Val Leu Gly Glu Val Ser Ala Val Gly Gln Trp
165          170          175
Gln Phe Ile Leu Gln Asp Arg Phe Val Arg Thr Ala Tyr Gln Phe Val
180          185          190
Glu Ala Thr
195
```

<210> 20

<211> 330

<212> DNA

<213> Pseudomonas aeruginosa

<400> 20

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agcttggtgct cccggccgat caggcgtcga acgggtggcca cgtcctcgcg ggtgtggatc      60
gaggcctggg tgtcaccaac ggcctttttc gagagctgct gcagatgccc ttccagcatg      120
tcctgcgggc tcacgaccat ggtgatgcac agcagcgtgt cctcgggcat tcgatcgaac      180
agggcggttg ggccatcgcc ttgagcgtc tcgccggtga agtggcctgt cagcggcgct      240
ttgttcaact ggtcgaccac aatcactcgg tgcggcatgg catcgaagag ccatacgccc      300
tgggtggcat cggaacagg ctgccgatag      330
```

<210> 21

<211> 109

<212> PRT

<213> Pseudomonas aeruginosa

<400> 21

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Ser Leu Cys Ser Arg Pro Ile Arg Arg Arg Thr Val Ala Thr Ser Ser
 1          5          10          15
Arg Val Trp Ile Glu Ala Trp Val Ser Pro Thr Ala Phe Phe Glu Ser
 20          25          30
Cys Cys Arg Cys Pro Ser Ser Met Ser Cys Gly Val Thr Thr Met Val
 35          40          45
Met His Ser Ser Val Ser Ser Gly Ile Arg Ser Asn Arg Ala Leu Arg
 50          55          60
Pro Ser Pro Leu Ser Val Ser Pro Val Lys Trp Pro Val Ser Gly Ala
```

65					70					75					80
Leu	Phe	Asn	Trp	Ser	Thr	Thr	Ile	Thr	Arg	Cys	Gly	Met	Ala	Ser	Lys
				85					90					95	
Ser	His	Thr	Pro	Trp	Val	Ala	Ser	Glu	Thr	Gly	Cys	Arg			
			100					105							

<210> 22  
 <211> 957  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 22

caccagggcc	tcgatccaca	cccgcgagga	cgtggccacc	gttcgacgcc	tgatcgggcg	60
ggagcacaag	ctctatcgcg	gagcgatcgc	tctgttcgtg	cgcgggccgcg	accataccca	120
gttggaggaa	cgctgcatca	ccctgagcaa	cgtactgctc	ggcgccggcc	tggtgccggt	180
cgaaccgcag	aacgaagtcg	gaccgctgaa	cagctacctg	cgctgggtcc	cctcaaactt	240
cgatccaaac	gagaagcgag	ccctggagtg	gtacacccag	atgatgttcg	ctcagcacat	300
cgccaacctg	tcgcccattc	gggggcgcac	caccggtacc	ggacaccctg	gcttcacgct	360
gttcaaccgt	ggcggcgcgc	cgttgacctt	cgaccctgtc	aacaagctgg	accggcagat	420
gaatgccac	ggcttcatct	tcggggcaac	tggctccggc	aagtcggcgt	ccctgaccaa	480
cctcatctgc	cagatgctcg	ccatgtacct	gccgcggatg	ttcgtcgcg	aagcgggcaa	540
cagcttcggc	ctgctggccg	acttagccaa	gcggtttggc	ctctcggtcc	accgggtgcg	600
cctcgccccg	ggctccggcg	tcagcctggc	gccgttcgcg	gacgccatca	agctggtcga	660
gagccccgac	caagtgaagg	tgctggacgc	cgaagacatc	gaggcctcgg	actcgggtcca	720
gggcagcaag	gccgacctcg	aggacgacca	gcgagacatc	ctggggcgaga	tggagatcgt	780
cgcccgctc	atgattaccg	gtggcggaaga	gaaggaagat	gcgcgcctga	cccgtgccga	840
tcgcagcgcc	gtccgccagg	cgatcctggc	ggcggccagg	acctgcgccg	ccgcgaaccg	900
cacggtactg	acccaagacg	tgcgcgatgc	gctctacgag	gcctccagga	gcgatag	957

<210> 23  
 <211> 318  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 23

His	Pro	Gly	Leu	Asp	Pro	His	Pro	Arg	Gly	Arg	Gly	His	Arg	Ser	Thr
1				5					10					15	
Pro	Asp	Arg	Pro	Gly	Ala	Gln	Ala	Leu	Ser	Arg	Ser	Asp	Arg	Ser	Val
			20					25					30		
Arg	Ala	Arg	Pro	Arg	Pro	Tyr	Pro	Val	Gly	Gly	Thr	Leu	His	His	Pro
			35			40					45				
Glu	Gln	Arg	Thr	Ala	Arg	Arg	Pro	Gly	Ala	Gly	Arg	Thr	Ala	Glu	
	50				55					60					
Arg	Ser	Arg	Thr	Ala	Glu	Gln	Leu	Pro	Ala	Leu	Ala	Pro	Leu	Lys	Leu
65				70				75						80	
Arg	Ser	Lys	Arg	Glu	Ala	Ser	Pro	Gly	Val	Val	His	Pro	Asp	Asp	Val
			85					90					95		
Arg	Ser	Ala	His	Arg	Gln	Pro	Val	Ala	His	Leu	Gly	Ala	His	His	Arg
			100				105						110		
Tyr	Arg	Thr	Pro	Trp	Leu	His	Ala	Val	Gln	Pro	Trp	Arg	Arg	Ala	Val
			115				120					125			
Asp	Leu	Arg	Pro	Val	Gln	Gln	Ala	Gly	Pro	Ala	Asp	Glu	Cys	Pro	Arg
			130			135					140				
Leu	His	Leu	Arg	Ala	Asn	Trp	Leu	Arg	Gln	Val	Gly	Val	Pro	Asp	Gln
145					150					155				160	
Pro	His	Leu	Pro	Asp	Ala	Arg	His	Val	Pro	Ala	Ala	Asp	Val	Arg	Arg
			165					170					175		
Gly	Ser	Gly	Gln	Gln	Leu	Arg	Pro	Ala	Gly	Arg	Leu	Ser	Gln	Ala	Val

	180		185		190										
Trp	Pro	Leu	Gly	Pro	Pro	Gly	Ala	Pro	Arg	Pro	Gly	Leu	Arg	Arg	Gln
	195		200		205										
Pro	Gly	Ala	Val	Arg	Gly	Arg	His	Gln	Ala	Gly	Arg	Glu	Pro	Arg	Pro
	210		215		220										
Ser	Glu	Gly	Ala	Gly	Arg	Arg	Arg	His	Arg	Gly	Leu	Gly	Leu	Gly	Pro
225					230					235					240
Gly	Gln	Gln	Gly	Arg	Pro	Arg	Gly	Arg	Pro	Ala	Arg	His	Pro	Gly	Arg
			245						250					255	
Asp	Gly	Asp	Arg	Arg	Pro	Pro	His	Asp	Tyr	Arg	Trp	Arg	Arg	Glu	Gly
			260					265						270	
Arg	Cys	Ala	Pro	Asp	Pro	Cys	Arg	Ser	Gln	Arg	Arg	Pro	Pro	Gly	Asp
	275						280					285			
Pro	Gly	Gly	Gly	Gln	Asp	Leu	Arg	Arg	Arg	Glu	Pro	His	Gly	Thr	Asp
	290					295					300				
Pro	Arg	Arg	Ala	Arg	Cys	Ala	Leu	Arg	Gly	Leu	Gln	Glu	Arg		
305					310					315					

<210> 24  
 <211> 330  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 24	
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ggcgagcatc tggcagatga gggttggtcag ggacgccgac ttgccggagc cagttggccc	120
gaagatgaag ccgtgggcat tcattctgccg gtccagcttg ttgaacgggt cgaaggtcaa	180
cggcgcgccg ccacgggtga acagcgtgaa gccaggggtgt ccggtaccgg tgggtgcgccc	240
ccagatgggc gacaggttgg cgatgtgctg agcgaacatc atctgggtgt accactccag	300
ggctcgcttc tcgtttggat cgaagtttga	330

<210> 25  
 <211> 109  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 25	
Val Gly Gln Gln Ala Glu Ala Val Ala Arg Phe Arg Asp Glu His Pro	
1 5 10 15	
Arg Gln Val His Gly Glu His Leu Ala Asp Glu Val Gly Gln Gly Arg	
20 25 30	
Arg Leu Ala Gly Ala Ser Trp Pro Glu Asp Glu Ala Val Gly Ile His	
35 40 45	
Leu Pro Val Gln Leu Val Glu Arg Val Glu Gly Gln Arg Arg Ala Ala	
50 55 60	
Thr Val Glu Gln Arg Glu Ala Arg Val Ser Gly Thr Gly Gly Ala Pro	
65 70 75 80	
Pro Asp Gly Arg Gln Val Gly Asp Val Leu Ser Glu His His Leu Gly	
85 90 95	
Val Pro Leu Gln Gly Ser Leu Leu Val Trp Ile Glu Val	
100 105	

<210> 26  
 <211> 642  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 26  
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gccgccagga tcgcctggcg gacggcgctg cgatcggcac gggtcaggcg cgcattcttc 120  
ttctcttcgc caccggtaat catgaggcgg gcgacgatct ccatctcgcc caggatgtct 180  
cgctggctgt cctcgaggtc ggccttgctg cctcggaccg agtccgaggc ctcgatgtct 240  
tcggcggtcca gcaccttcac ttgggtcgggg ctctcgacca gcttgatggc gtccgcgaac 300  
ggcgccaggc tgacgccgga gcccgggcg aggccgaccc ggtggaccga gaggccaaac 360  
cgcttggtta agtcggccag caggccgaag ctggtgcccg cttccgcgac gaacatccgc 420  
ggcaggtaca tggcgagcat ctggcagatg aggttggtca gggacgccga cttgccggag 480  
ccagttggcc cgaagatgaa gccgtgggca ttcattctgc ggtccagctt gttgaacggg 540  
tcgaagggtca acggcgcgcc gccacggttg aacagcgtga agccagggtg tccggtagccg 600  
gtgggtgcgcc cccagatggg cgacaggttg gcgatgtgct ga 642

<210> 27  
<211> 213  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 27  
Ser Ala Ser Arg Thr Ser Trp Val Ser Thr Val Arg Phe Ala Ala Ala  
1 5 10 15  
Gln Val Leu Ala Ala Ala Arg Ile Ala Trp Arg Thr Ala Leu Arg Ser  
20 25 30  
Ala Arg Val Arg Arg Ala Ser Ser Phe Ser Ser Pro Pro Val Ile Met  
35 40 45  
Arg Arg Ala Thr Ile Ser Ile Ser Pro Arg Met Ser Arg Trp Ser Ser  
50 55 60  
Ser Arg Ser Ala Leu Leu Pro Trp Thr Glu Ser Glu Ala Ser Met Ser  
65 70 75 80  
Ser Ala Ser Ser Thr Phe Thr Trp Ser Gly Leu Ser Thr Ser Leu Met  
85 90 95  
Ala Ser Ala Asn Gly Ala Arg Leu Thr Pro Glu Pro Gly Ala Arg Arg  
100 105 110  
Thr Arg Trp Thr Glu Arg Pro Asn Arg Leu Ala Lys Ser Ala Ser Arg  
115 120 125  
Pro Lys Leu Leu Pro Ala Ser Ala Thr Asn Ile Arg Gly Arg Tyr Met  
130 135 140  
Ala Ser Ile Trp Gln Met Arg Leu Val Arg Asp Ala Asp Leu Pro Glu  
145 150 155 160  
Pro Val Gly Pro Lys Met Lys Pro Trp Ala Phe Ile Cys Arg Ser Ser  
165 170 175  
Leu Leu Asn Gly Ser Lys Val Asn Gly Ala Pro Pro Arg Leu Asn Ser  
180 185 190  
Val Lys Pro Gly Cys Pro Val Pro Val Val Arg Pro Gln Met Gly Asp  
195 200 205  
Arg Leu Ala Met Cys  
210

<210> 28  
<211> 1407  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 28  
gcgcctgttg ggccgtatca ggctgtggat gttgtgtcag ccattcatcc aagagctgct 60  
ttatctgcgg gacgatatcc cggcgatcga ctgccctcag ttgaatctgc tgcagctcct 120  
ctatcagtagc aggcgcgcat atccttagcg tctgcagggc atcctcttcg gggttctgca 180  
ggatctgggt cagggtgtcg atcaggttct gggtcagcga attcagaact ctcattcgct 240

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ctggcactcc actgccggtt ggtctgggaa aacaatgggg aaggggtggca ggccgcgcgc 300
cttgtcgaga tccgctgcga cctgcaaggc cgctcgagc tcgtcgagc cgggtggcttg 360
catgatgttg tagcgctggt tcttttcttc gttttcggtc atggccaggg ccaggtagag 420
actcggggga accacacgga cgaggtattc tttgcccttg gccaggagca cgccctcggg 480
gaacttgccg ctttccttgc gggccgagag catcatcgac ttctgcgccg gcgacagctc 540
gcggaacctg gatatacttct ctacttcgtc ggggggcatg ttcaggcaca accaccactc 600
gatcatgttc agcatcggcg ccccgagggc tgggatgtcg tcgatgttct ggggtggcgag 660
ccagaaccag gcgcccagtt tccgccacat cttggtgatc ttcatggcgt agggcagcag 720
cagcgggtgc ttggtgatga tgtgcccctc atcggtgatc ttgacgattg gccggccctt 780
gaactggtcg cgttcggcga tgttgttcac ggtgttcagc agcgagatgt aggcgatccc 840
gagctgggag gcgtagcctt cgcgcgcgta cgttgcgaaa tccaccacgg taaggtcggc 900
ctcaggccag ggcgtgcctt cgcgattgaa catctcgccg tcggcgccca tgcagaacat 960
ctgcatgggt tccgccattt cggcgatccg cgcgcggcgt tctggcgccg tgctatcgct 1020
cctggaggcc tcgtagagcg catcgcgcac gtcttgggtc agtaccgtgc ggttcgcggc 1080
ggcgcaggtc ctggccgccg ccaggatcgc ctggcggacg gcgctgcgat cggcacgggt 1140
caggcgcgca tcttctcttct cttcgccacc ggtaatcatg aggcgggcca cgatctccat 1200
ctcgcccagg atgtctcgct ggtcgtcctc gaggtcggcc ttgctgccct ggaccgagtc 1260
cgaggcctcg atgtcttcgg cgtccagcac cttcacttgg tcggggctct cgaccagctt 1320
gatggcgtcc gcgaacggcg ccaggctgac gccggagccc ggggcgaggc gcacccggtg 1380
gaccgagagg ccaaaccgct tggctaa 1407

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<210> 29

<211> 468

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 29

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Ala Pro Val Gly Pro Tyr Gln Ala Val Asp Val Val Ala Ala Ile His
 1          5          10          15
Pro Arg Ala Ala Leu Ser Ala Gly Arg Tyr Pro Gly Asp Arg Leu Pro
          20          25          30
Ser Val Glu Ser Ala Ala Ala Pro Leu Ser Val Gln Glu Arg Ile Ser
          35          40          45
Leu Ala Ser Ala Gly His Pro Leu Arg Gly Ser Ala Gly Ser Gly Ser
          50          55          60
Gly Cys Arg Ser Gly Ser Gly Ser Ala Asn Ser Glu Leu Ser Phe Val
65          70          75          80
Leu Ala Leu His Cys Arg Leu Val Trp Glu Asn Asn Gly Glu Gly Trp
          85          90          95
Gln Ala Ala Arg Leu Val Glu Ile Arg Cys Asp Leu Gln Gly Arg Leu
          100          105          110
Glu Leu Val Ala Ala Gly Gly Leu His Asp Val Val Ala Leu Val Leu
          115          120          125
Phe Phe Val Phe Gly His Gly Gln Gly Gln Val Glu Thr Arg Gly Asn
          130          135          140
His Thr Asp Glu Val Phe Phe Ala Leu Gly Gln Glu His Ala Leu Gly
          145          150          155          160
Glu Leu Ala Ala Phe Leu Ala Gly Arg Glu His His Arg Leu Leu Arg
          165          170          175
Arg Arg Gln Leu Ala Glu Pro Gly Tyr Leu Leu Tyr Phe Val Gly Gly
          180          185          190
His Val Gln Ala Gln Pro Pro Leu Asp His Val Gln His Arg Arg Pro
          195          200          205
Gly Gly Trp Asp Val Val Asp Val Leu Gly Gly Glu Pro Glu Pro Gly
          210          215          220
Ala Gln Phe Pro Pro His Leu Gly Asp Leu His Gly Val Gly Gln Gln
          225          230          235          240
Gln Arg Val Leu Gly Asp Asp Val Pro Leu Ile Gly Asp Leu Asp Asp
          245          250          255

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Trp Pro Ala Leu Glu Leu Val Ala Phe Gly Asp Val Val His Gly Val  
 260 265 270  
 Gln Gln Arg Asp Val Gly Asp Pro Glu Leu Gly Gly Val Ala Phe Ala  
 275 280 285  
 Arg Val Arg Cys Glu Ile His His Gly Lys Val Gly Leu Arg Pro Gly  
 290 295 300  
 Arg Ala Phe Ala Ile Glu His Leu Ala Val Gly Ala His Ala Glu His  
 305 310 315 320  
 Leu His Gly Phe Arg His Phe Gly Asp Pro Arg Ala Ala Phe Trp Arg  
 325 330 335  
 Gly Ala Ile Ala Pro Gly Gly Leu Val Glu Arg Ile Ala His Val Leu  
 340 345 350  
 Gly Gln Tyr Arg Ala Val Arg Gly Gly Ala Gly Pro Gly Arg Arg Gln  
 355 360 365  
 Asp Arg Leu Ala Asp Gly Ala Ala Ile Gly Thr Gly Gln Ala Arg Ile  
 370 375 380  
 Phe Leu Leu Phe Ala Thr Gly Asn His Glu Ala Gly Asp Asp Leu His  
 385 390 395 400  
 Leu Ala Gln Asp Val Ser Leu Val Val Leu Glu Val Gly Leu Ala Ala  
 405 410 415  
 Leu Asp Arg Val Arg Gly Leu Asp Val Phe Gly Val Gln His Leu His  
 420 425 430  
 Leu Val Gly Ala Leu Asp Gln Leu Asp Gly Val Arg Glu Arg Arg Gln  
 435 440 445  
 Ala Asp Ala Gly Ala Arg Gly Glu Ala His Pro Val Asp Arg Glu Ala  
 450 455 460  
 Lys Pro Leu Gly  
 465

<210> 30  
 <211> 798  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 30  
 gggggcacatc atcaccaagc acccgctgct gctgccctac gccatgaaga tcaccaagat 60  
 gtggcgga aa ctgggcgcct gggtctggct cgccaccag aacatcgacg acatcccagc 120  
 ctccggggcg ccgatgctga acatgatcga gtgggtggtg tgccctgaaca tgccccccga 180  
 cgaagtagag aagatatcca gggtccgcga gctgtgcgcg gcgcagaagt cgatgatgct 240  
 ctccggcccg aaggaaagcg gcaagttcac cgaggcgctg ctccctggcca agggcaaaga 300  
 atacctcgtc cgtgtgtgttc ccccgagtct ctacctggcc ctggccatga ccgaaaacga 360  
 agaaaagaac cagcgctaca acatcatgca agccaccggc tgcgacgagc tcgaggcggc 420  
 cttgcaggtc gcagcggatc tcgacaaggc gcgcggcctg ccacccttcc ccattgtttt 480  
 cccagaccaa ccggcagtg agtgccagga cgaatgagag ttctgaattc gctgaccag 540  
 aacctgatcg acaacctgac ccagatcctg cagaaccccg aagaggatgc cctgcagacg 600  
 ctaaggatat gcgctcctgt actgatagag gagctgcagc agattcaact gagggcagtc 660  
 gatcgccggg atatcgctcc gcagataaag cagctcttgg atgaatggct gcaacaacat 720  
 ccacagcctg atacggccca acaggcgctc attgaggccg tggaccgcgc ggagatccta 780  
 cagcggaggc aagcgtga 798

<210> 31  
 <211> 265  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 31  
 Gly Ala His His His Gln Ala Pro Ala Ala Ala Leu Arg His Glu  
 1 5 10 15

Asp His Gln Asp Val Ala Glu Thr Gly Arg Leu Val Leu Ala Arg His  
 20 25 30  
 Pro Glu His Arg Arg His Pro Ser Leu Arg Gly Ala Asp Ala Glu His  
 35 40 45  
 Asp Arg Val Val Val Val Pro Glu His Ala Pro Arg Arg Ser Arg Glu  
 50 55 60  
 Asp Ile Gln Val Pro Arg Ala Val Ala Gly Ala Glu Val Asp Asp Ala  
 65 70 75 80  
 Leu Gly Pro Gln Gly Lys Arg Gln Val His Arg Gly Arg Ala Pro Gly  
 85 90 95  
 Gln Gly Gln Arg Ile Pro Arg Pro Cys Gly Ser Pro Glu Ser Leu Pro  
 100 105 110  
 Gly Pro Gly His Asp Arg Lys Arg Arg Lys Glu Pro Ala Leu Gln His  
 115 120 125  
 His Ala Ser His Arg Leu Arg Arg Ala Arg Gly Gly Leu Ala Gly Arg  
 130 135 140  
 Ser Gly Ser Arg Gln Gly Ala Arg Pro Ala Thr Leu Pro His Cys Phe  
 145 150 155 160  
 Pro Arg Pro Thr Gly Ser Gly Val Pro Gly Arg Met Arg Val Leu Asn  
 165 170 175  
 Ser Leu Thr Gln Asn Leu Ile Asp Asn Leu Thr Gln Ile Leu Gln Asn  
 180 185 190  
 Pro Glu Glu Asp Ala Leu Gln Thr Leu Arg Ile Cys Ala Pro Val Leu  
 195 200 205  
 Ile Glu Glu Leu Gln Gln Ile Gln Leu Arg Ala Val Asp Arg Arg Asp  
 210 215 220  
 Ile Val Pro Gln Ile Lys Gln Leu Leu Asp Glu Trp Leu Gln Gln His  
 225 230 235 240  
 Pro Gln Pro Asp Thr Ala Gln Gln Ala Leu Ile Glu Ala Val Asp Arg  
 245 250 255  
 Ala Glu Ile Leu Gln Arg Arg Gln Ala  
 260 265

<210> 32  
 <211> 354  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 32  
 ccgaaaacga agaaaagaac cagcgctaca acatcatgca agccaccggc tgcgacgagc 60  
 tcgaggcggc cttgcaggct gcagcggatc tcgacaaggc gcgcggcctg ccacccttcc 120  
 ccattgtttt cccagaccaa ccggcagtggt agtgccagga cgaatgagag ttctgaattc 180  
 gctgacccag aacctgatcg acaacctgac ccagatcctg cagaacccccg aagaggatgc 240  
 cctgcagacg ctaaggatat gcgctcctgt actgatagag gagctgcagc agattcaact 300  
 gagggcagtc gatcgccggg atatcgctccc gcagataaag cagctcttgg atga 354

<210> 33  
 <211> 117  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 33  
 Pro Lys Thr Lys Lys Arg Thr Ser Ala Thr Thr Ser Cys Lys Pro Pro  
 1 5 10 15  
 Ala Ala Thr Ser Ser Arg Arg Pro Cys Arg Ser Gln Arg Ile Ser Thr  
 20 25 30  
 Arg Arg Ala Ala Cys His Pro Ser Pro Leu Phe Ser Gln Thr Asn Arg  
 35 40 45

Gln	Trp	Ser	Ala	Arg	Thr	Asn	Glu	Ser	Ser	Glu	Phe	Ala	Asp	Pro	Glu
50						55					60				
Pro	Asp	Arg	Gln	Pro	Asp	Pro	Asp	Pro	Ala	Glu	Pro	Arg	Arg	Gly	Cys
65					70					75					80
Pro	Ala	Asp	Ala	Lys	Asp	Met	Arg	Ser	Cys	Thr	Asp	Arg	Gly	Ala	Ala
				85					90					95	
Ala	Asp	Ser	Thr	Glu	Gly	Ser	Arg	Ser	Pro	Gly	Tyr	Arg	Pro	Ala	Asp
			100					105					110		
Lys	Ala	Ala	Leu	Gly											
			115												

<210> 34  
 <211> 645  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 34

gtcaataagt	tcgttgtctt	tcgcacat	ctccagtcga	gcctgggtcca	gttcaggaaa	60
gtccaatgtg	ccgccaggca	gcccgc	gttgccggcc	gactgagcga	agatcgcatc	120
gatagcgctc	cagaaggctt	tggcgccgcc	ttggatcccc	gcgcactcca	ccaggcgagc	180
ctgggtggcgg	gccgcctcgc	catgcatctg	caggggaaga	tggcgccaaa	ccagggttcac	240
gtccggatgg	ctgtctaccc	agcgcttaag	ccgcgggggtg	tagaccttgc	agaaggggca	300
ctccaggctg	gcgtattcat	tgatcgtcca	gcgcgctttc	gcacgcgcgt	agaggctgtg	360
gttggtctggc	aggcccttca	ccagaagctc	tacccttacg	gcggatgcag	ccagcaagac	420
cagcagcagc	cccgc	ccagg	gcagggcggg	accttgaaat	cgtttggctg	480
cttcaagagt	ctcacgcttg	cctccgctgt	aggatctccg	cgcggtccac	ggcctcaatg	540
agcgctgtt	gggccgtatc	aggctgtgga	tgttgttgca	gccattcatc	caagagctgc	600
tttatctgcg	ggacgatatc	ccggcgatcg	actgccctca	gttga		645

<210> 35  
 <211> 214  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 35

Val	Asn	Lys	Phe	Val	Val	Phe	Arg	Thr	Phe	Leu	Gln	Ser	Ser	Leu	Val
1				5					10					15	
Gln	Phe	Arg	Lys	Val	Gln	Cys	Ala	Ala	Arg	Gln	Pro	Ala	Pro	Val	Ala
			20					25					30		
Gly	Arg	Leu	Ser	Glu	Asp	Arg	Ile	Asp	Ser	Ala	Pro	Glu	Gly	Phe	Gly
		35				40					45				
Ala	Ala	Leu	Asp	Pro	Arg	Ala	Leu	His	Gln	Ala	Ser	Leu	Val	Ala	Gly
	50					55					60				
Arg	Leu	Ala	Met	His	Leu	Gln	Gly	Lys	Met	Ala	Pro	Asn	Gln	Val	His
65				70					75					80	
Val	Arg	Met	Ala	Val	Tyr	Pro	Ala	Leu	Lys	Pro	Arg	Gly	Val	Asp	Leu
			85					90					95		
Ala	Glu	Gly	Ala	Leu	Gln	Val	Gly	Val	Phe	Ile	Asp	Arg	Pro	Ala	Arg
			100				105						110		
Phe	Arg	Ile	Ala	Val	Glu	Ala	Val	Val	Gly	Trp	Gln	Ala	Leu	His	Gln
		115					120					125			
Lys	Leu	Tyr	Pro	Tyr	Gly	Gly	Cys	Ser	Gln	Gln	Asp	Gln	Gln	Gln	Pro
	130					135					140				
Arg	Pro	Gly	Gln	Gly	Gly	Thr	Leu	Lys	Ser	Phe	Gly	Cys	Pro	Ala	Ala
145					150					155				160	
Leu	Gln	Glu	Ser	His	Ala	Cys	Leu	Arg	Cys	Arg	Ile	Ser	Ala	Arg	Ser
			165					170						175	
Thr	Ala	Ser	Met	Ser	Ala	Cys	Trp	Ala	Val	Ser	Gly	Cys	Gly	Cys	Cys



210 215  
 Ile Asp Trp Leu Ala Lys Asp Leu  
 225 230

220

<210> 38  
 <211> 333  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 38  
 acctggtttg gcgccatctt cccctgcaga tgcattggcga ggcggcccgc caccaggctc 60  
 gcctggtgga gtgcgcgggg atccaaggcg gcgccaaaagc cttctggagc gctatcgatg 120  
 cgatcttcgc tcagtcggcc ggcaacgggg gcgggctgcc tggcggcaca ttggactttc 180  
 ctgaactgga ccaggctcga ctggagaaat gtgcgaaaga caacgaactt attgactcag 240  
 atatcaagtt ggacatcgac attgcacggt cgaaggcat tacagcgacc ccgaccctcg 300  
 tcattccgga caaccagacg ggacgaagcg tga 333

<210> 39  
 <211> 110  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 39  
 Thr Trp Phe Gly Ala Ile Phe Pro Cys Arg Cys Met Ala Arg Arg Pro  
 1 5 10 15  
 Ala Thr Arg Leu Ala Trp Trp Ser Ala Arg Gly Ser Lys Ala Ala Pro  
 20 25 30  
 Lys Pro Ser Gly Ala Leu Ser Met Arg Ser Ser Leu Ser Arg Pro Ala  
 35 40 45  
 Thr Gly Ala Gly Cys Leu Ala Ala His Trp Thr Phe Leu Asn Trp Thr  
 50 55 60  
 Arg Leu Asp Trp Arg Asn Val Arg Lys Thr Thr Asn Leu Leu Thr Gln  
 65 70 75 80  
 Ile Ser Ser Trp Thr Ser Thr Leu His Gly Arg Arg Ala Leu Gln Arg  
 85 90 95  
 Pro Arg Pro Ser Ser Ser Gly Thr Thr Arg Arg Asp Glu Ala  
 100 105 110

<210> 40  
 <211> 327  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 40  
 gaaatcggcg aggattccaa catccctctt ttggtcctcc aggatgccct gcacttcacc 60  
 tggcagaacc tcgacctcct ccccatccac aatctttacc attctcttgt ggccggagct 120  
 ggtgaggcta agcctcaact ccattgccgg ccgagcattg atgtaaatgc tctcgagcaa 180  
 gcgctccatg acttcgacca ctccttaata tcagttagcc agctacatac aggaattatg 240  
 ctacccagga catgcaggcg tcacccttac ttatgtacgt ggcagcggtc gatcacggct 300  
 cgaaaaaata caccacctac gatttga 327

<210> 41  
 <211> 108  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 41

Glu	Ile	Gly	Glu	Asp	Ser	Asn	Ile	Pro	Leu	Leu	Val	Leu	Gln	Asp	Ala
1				5					10					15	
Leu	His	Phe	Thr	Trp	Gln	Asn	Leu	Asp	Leu	Leu	Pro	Ile	His	Asn	Leu
			20					25					30		
Tyr	His	Ser	Leu	Val	Ala	Gly	Ala	Gly	Glu	Ala	Lys	Pro	Gln	Leu	His
		35				40						45			
Cys	Arg	Pro	Ser	Ile	Asp	Val	Asn	Ala	Leu	Glu	Gln	Ala	Leu	His	Asp
	50					55					60				
Phe	Asp	His	Ser	Leu	Ile	Ser	Val	Ser	Gln	Leu	His	Thr	Gly	Ile	Met
65					70					75					80
Leu	Pro	Arg	Thr	Cys	Arg	Arg	His	Pro	Tyr	Leu	Cys	Thr	Trp	Gln	Arg
			85						90					95	
Ser	Ile	Thr	Ala	Arg	Lys	Asn	Thr	Pro	Pro	Thr	Ser				
			100					105							

<210> 42  
 <211> 303  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 42	
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cagacccatg	cctcttcac actcccccc tggccggcgg ccaccaacgc tggccggttg 120
cgtactactg	gtactgctga gcagcgcgag tcaggccgaa acctgggtca tcaccgacaa 180
ggctcatccg	gtctctgcca ccggatcgtc gcgcgttctg tttctggacg cccaggaaca 240
cctcgaggag	caactgactg cggccttgcc ccaggatcca cagcatgctc aagcggcggtt 300
taa	303

<210> 43  
 <211> 100  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 43															
Phe	Pro	Ala	Ala	Leu	Ser	Glu	Val	Ile	Leu	Ser	Ala	Val	Cys	Thr	Phe
1				5				10					15		
Leu	Glu	Pro	Val	Gln	Thr	His	Ala	Ser	Ser	Ser	Leu	Pro	Pro	Trp	Pro
			20					25				30			
Ala	Ala	Thr	Asn	Ala	Gly	Arg	Trp	Arg	Thr	Thr	Gly	Thr	Ala	Glu	Gln
		35				40					45				
Arg	Glu	Ser	Gly	Arg	Asn	Leu	Gly	His	His	Arg	Gln	Gly	Ser	Ser	Gly
	50				55					60					
Leu	Cys	His	Arg	Ile	Val	Ala	Arg	Ser	Val	Ser	Gly	Arg	Pro	Gly	Thr
65					70					75					80
Pro	Arg	Gly	Ala	Thr	Asp	Cys	Gly	Leu	Ala	Pro	Gly	Ser	Thr	Ala	Cys
			85					90						95	
Ser	Ser	Gly	Val												
			100												

<210> 44  
 <211> 447  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 44	
aaccgggtaca	gacccatgcc tcttcatcac tccccccctg gccggcggcc accaacgctg 60
gccgttggcg	tactactggt actgctgagc agcgcgagtc aggccgaaac ctgggtcatc 120

accgacaagg	ctcatccggt	ctctgccacc	ggatcgctcg	gcgttctgtt	tctggacgcc	180
caggaacacc	tcgaggagca	actgactgcg	gccttgcccc	aggatccaca	gcattgctcaa	240
gcggcggttta	agcgattgct	acaaagcccc	gatgggagcc	gcctgcaggc	agagctggtc	300
aaggcacaac	aagacgtcgc	cgatgcgtgg	agtctcggtg	tcgagaagat	ccctgccgta	360
gtagtcgata	ggcagtacgt	ggtctacggc	gaaccggatg	tttcgcgcgc	tcttgagcta	420
atcgccaagg	ccaggaggtc	gcgctga				447

<210> 45

<211> 148

<212> PRT

<213> Pseudomonas aeruginosa

<400> 45

Asn	Arg	Tyr	Arg	Pro	Met	Pro	Leu	His	His	Ser	Pro	Pro	Gly	Arg	Arg
1				5				10						15	
Pro	Pro	Thr	Leu	Ala	Val	Gly	Val	Leu	Leu	Val	Leu	Leu	Ser	Ser	Ala
		20					25						30		
Ser	Gln	Ala	Glu	Thr	Trp	Val	Ile	Thr	Asp	Lys	Ala	His	Pro	Val	Ser
	35					40					45				
Ala	Thr	Gly	Ser	Ser	Arg	Val	Leu	Phe	Leu	Asp	Ala	Gln	Glu	His	Leu
	50					55					60				
Glu	Glu	Gln	Leu	Thr	Ala	Ala	Leu	Pro	Gln	Asp	Pro	Gln	His	Ala	Gln
65					70				75					80	
Ala	Ala	Phe	Lys	Arg	Leu	Leu	Gln	Ser	Pro	Asp	Gly	Arg	Arg	Leu	Gln
			85					90						95	
Ala	Glu	Leu	Val	Lys	Ala	Gln	Gln	Asp	Val	Ala	Asp	Ala	Trp	Ser	Leu
			100					105					110		
Gly	Val	Glu	Lys	Ile	Pro	Ala	Val	Val	Val	Asp	Arg	Gln	Tyr	Val	Val
	115					120						125			
Tyr	Gly	Glu	Pro	Asp	Val	Ser	Arg	Ala	Leu	Glu	Leu	Ile	Ala	Lys	Ala
	130					135					140				
Arg	Arg	Ser	Arg												
145															

<210> 46

<211> 1017

<212> DNA

<213> Pseudomonas aeruginosa

<400> 46

ttcgtctccg	tgtccttatt	ggaagtcggt	actgcagatg	aacatctgcc	ccttgcgctg	60
gcagcaggag	tagggacgcc	agagcgccca	ggcgtgctcc	ccgtcgacgg	cttgctctt	120
cggcccagag	ttgggaaaca	ccgcgcagtt	gaggctcagg	gatggggtca	gctcctgcca	180
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 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 47  
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 Gly Cys Ala His Gly Glu Val Asp Val Glu Leu Ala Asp Ser Arg Gly  
 85 90 95  
 Asp Ile Ala Gly Ala Leu Gly Asp Asp Gly Cys Arg Leu Val Val Val  
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 Gly Leu Val Gln Glu Ala Ala Ala Arg Ile Glu Val Pro Pro His Val  
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 Cys Ala Glu Lys Val Arg His Gln Arg Asp Gly Gly Ala Arg Ala Asn  
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 Val Pro Arg Gly Ala Gly Glu Pro Ala Glu Arg Gly Ala Thr Arg Met  
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 Ala Asp His Ile Arg Phe Leu Glu Ala Ala Asp Ala Val Leu Gly Leu  
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 Val Val Cys Gly Arg Val Ile Ala Gly Leu Gly Glu Trp Ile Arg Cys  
 210 215 220  
 Thr Gln Arg Arg Tyr Leu Gly Pro Gly Val Ala Pro Gly Ile Arg Val  
 225 230 235 240  
 Ala Gly Asp Asp Cys Val Arg His Val Val Ala Asp Leu Asp Arg Arg  
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 Leu His Phe Ala Ala Met Arg Ala Ala Glu Gln Pro Val Thr Asp Pro  
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 Asp Asp Leu Val Phe Glu Ala Leu Arg Gly Lys Gly Gly Gly Asp Asp  
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 Gly Ser Ala Val Asp Arg Gly Arg Gly Arg Glu Arg Glu Ala Glu Gly  
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 Ser Pro

<210> 48  
 <211> 969  
 <212> DNA  
 <213> Pseudomonas aeruginosa

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<210> 49

<211> 322

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 49

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Trp Thr Glu Val Ser Ala Leu Gly Thr Pro Asn Pro Leu Ala Gln Ala
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Phe Lys Glu Ala Asp Val Ile Gly His Pro Gly Gly Ala Thr Phe Ser
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Arg Phe Ala Ser Ala Ser Gly Tyr Val Cys Pro Gly Ala Thr Val Pro
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Leu Val Pro Tyr Phe Leu Ser Thr Leu Asp Ala Ile Gly Trp Arg His
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Glu Val Gly Gly Ile Phe Ser Gly Asp Met Trp Gly Asn Leu Tyr Pro
 195         200         205
Arg Ser Gly Phe Leu His Gln Thr Asp Asp Tyr Lys Thr Ala Ala Val
 210         215         220
Ile Ala Gln Arg Ala Gly Asp Ile Thr Thr Arg Ile Gly Gln Leu His
 225         230         235         240
Val Tyr Leu Pro Met Arg Ala Ala Pro Lys Asp Gly Tyr Trp Pro Ala
 245         250         255
Gly Glu Leu Lys Glu Gly Asp Ala Ser Thr Gly Lys Trp Gln Glu Leu
 260         265         270
Thr Pro Ser Leu Ser Leu Asn Cys Ala Val Phe Pro Asn Ser Gly Pro
 275         280         285

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Lys Thr Gln Ala Val Asp Gly Glu His Ala Trp Ala Leu Trp Arg Pro  
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 <212> DNA  
 <213> Pseudomonas aeruginosa

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<210> 51  
 <211> 674  
 <212> PRT  
 <213> Pseudomonas aeruginosa

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Ser	Arg	Arg	Arg	Gly	Ala	Arg	Leu	Gly	Ala	Leu	Ala	Ser	Leu	Leu	Leu		
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	195						200					205					
Arg	Thr	Arg	Arg	Arg	Ile	Met	Arg	Met	Asn	Ile	Thr	Ser	Val	Ala	Leu		
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			260					265					270				
Ile	Gly	Val	Gly	Phe	Gly	Trp	Asn	Asn	Asp	Met	Met	Cys	Gly	Asn	Met		
	275						280					285					
Asn	Leu	Ser	Thr	Thr	Leu	Glu	Asn	Gln	Leu	Asn	Gly	Ala	Thr	Gln	Gly		
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Gly	Glu	Gln	Thr	Gly	Trp	Gly	Lys	Ile	Ala	Glu	Gly	Gln	Ala	Leu	Gly		
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Val	Glu	Lys	Lys	Gly	Gly	Asn	Asp	Gly	Val	Thr	Trp	Val	Gly	Gly	Asp		
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Lys	Ala	Gly	Gly	Ser	Gly	Gln	Lys	Pro	Ile	Arg	Ile	Val	Asn	Asp	Val		
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Thr	Arg	Ala	Gly	Tyr	Asn	Leu	Leu	Thr	Ser	Arg	Ser	Val	Asn	Asp	Ser		
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Ser	Ser	Val	Pro	Ser	Ala	Thr	Cys	Asn	Asn	Gly	Leu	Val	Cys	Asn	Thr		
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Val	Ile	Glu	Ala	Leu	Arg	Asp	Glu	Arg	Asp	Gln	Asp	Val	Leu	Ala	Arg	
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	595						600					605				
Gln	Gln	Glu	Ile	Ser	Asn	Leu	Lys	Thr	Glu	Leu	Glu	Leu	Arg	Arg	Glu	
	610					615					620					
Leu	Ala	Ser	Asn	Ser	Pro	Met	Arg	Val	Ile	Glu	Arg	Gly	Gln	Gln	Arg	
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 <211> 375  
 <212> DNA  
 <213> Pseudomonas aeruginosa

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<210> 53  
 <211> 124  
 <212> PRT  
 <213> Pseudomonas aeruginosa

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35 40 45	
Thr Pro Lys Arg Trp Ser Gln Gly Cys Ala Arg Trp Val Glu Ser Ser	
50 55 60	
Pro Ala Thr Cys Gly Gly Thr Ser Ile Arg Ala Ala Ala Ser Cys Thr	
65 70 75 80	
Arg Pro Thr Thr Thr Arg Arg Gln Pro Ser Ser Pro Ser Ala Pro Ala	
85 90 95	
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<210> 54  
 <211> 612  
 <212> DNA  
 <213> Pseudomonas aeruginosa

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<210> 55  
 <211> 203  
 <212> PRT  
 <213> Pseudomonas aeruginosa

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 Gln Asp Arg His Gly Ala Gln Arg Arg Gly Pro Leu Gln His Trp Arg  
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 Arg Gln Cys Gly Glu His Gly Gln Arg Arg Pro Asp Gly Leu Asp Arg  
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 Glu His His Gly Leu Ser His Pro Glu Arg Asp Arg Arg Gly His Val  
 145 150 155 160  
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<210> 56  
 <211> 798  
 <212> DNA

<213> Pseudomonas aeruginosa

<400> 56

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<210> 57

<211> 265

<212> PRT

<213> Pseudomonas aeruginosa

<400> 57

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Ala	Ala	Gly	Asn	Trp	Gln	Ser	Ile	Gly	Ala	Gly	Arg	Ser	Gln	Val	Leu	
		35					40					45				
Cys	Ser	Gln	Trp	Phe	Ala	Leu	Arg	Gln	Gln	Leu	Leu	Gln	Arg	Leu	Glu	
	50					55				60						
Leu	Leu	Val	Val	Gly	Leu	Leu	Asp	Gln	Arg	Gly	Glu	Ala	Asp	Ala	Ser	
65					70				75					80		
Ser	Arg	His	Arg	Leu	Ala	Ala	Phe	Ala	Gly	Leu	Leu	Leu	Leu	Leu		
			85					90					95			
Pro	Gln	Tyr	Pro	Gly	Gly	Glu	Cys	Gly	Gly	Leu	Leu	Gly	Gly	Gly	Pro	
		100						105					110			
Ser	Val	Ala	Asp	Gln	Ala	Val	Val	Ala	Ser	Gly	Gly	Arg	His	Ala	Arg	
		115					120					125				
Arg	Ile	Ile	His	Arg	Ala	Ala	Gly	Gln	Gln	Val	Val	Ala	Arg	Pro	Gly	
	130					135					140					
His	Val	Val	Asp	Asp	Ala	Asn	Gly	Leu	Leu	Ala	Gly	Ala	Ala	Gly	Leu	
145					150				155					160		
Val	Ser	Thr	Asn	Pro	Gly	Tyr	Ala	Ile	Val	Ala	Ala	Phe	Leu	Leu	His	
			165					170					175			
Cys	Phe	Glu	Gly	Gly	Tyr	Gly	Val	Phe	Pro	Val	Arg	Gly	Gln	Cys	Gly	
		180						185				190				
Ala	Gln	Gly	Leu	Ala	Phe	Gly	Asp	Phe	Pro	Pro	Ala	Gly	Leu	Leu	Ala	
		195					200					205				
Ser	Asp	Val	Ser	His	Leu	Phe	Gly	Asp	Arg	Phe	Ala	Ser	Pro	Phe	Arg	
	210					215					220					
Ala	Val	Val	Val	Asp	Pro	Arg	Leu	Gln	Asp	Ala	Ile	Gly	Asp	Gln	Val	
225					230					235				240		
Val	Glu	Leu	Arg	Val	Arg	Ala	Leu	Asp	Asp	Gln	Arg	Arg	Gln	Arg	His	
			245					250					255			
Asp	Arg	Ala	Gly	Arg	Val	Leu	Asp	Asp								
		260					265									

<210> 58  
 <211> 321  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 58  
 ttctgtcgcgc gtgccttccg ccacttgcaa caacggcctg gtctgcaaca cttgggtcctc 60  
 cccccaggag gccgccgcat tcgccacccg ggtactgggg gagcaacagc aacagacctg 120  
 cgaaggctgc cagaagacgg tgacggctgc tggcgctcggc ctcaccccg c tgatccagga 180  
 gacctacgac aagaagctcc agtcgctgca ggagctgctg tcgaagagca aaccactgac 240  
 tgcagagaac ctggctgcgg ccggcaccga tgctctgcca attaccgcgc gcgtcatcga 300  
 ggcgctgcgc gacgagcgtg a 321

<210> 59  
 <211> 106  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 59  
 Phe Val Glu Arg Ala Phe Arg His Leu Gln Gln Arg Pro Gly Leu Gln  
 1 5 10 15  
 His Leu Val Leu Pro Pro Gly Gly Arg Arg Ile Arg His Pro Gly Thr  
 20 25 30  
 Gly Gly Ala Thr Ala Thr Asp Leu Arg Arg Leu Pro Glu Asp Gly Asp  
 35 40 45  
 Gly Cys Trp Arg Arg Pro His Pro Ala Asp Pro Gly Asp Leu Arg Gln  
 50 55 60  
 Glu Ala Pro Val Ala Ala Gly Ala Ala Val Glu Glu Gln Thr Thr Asp  
 65 70 75 80  
 Cys Arg Glu Pro Gly Cys Gly Arg His Arg Cys Ser Ala Asn Tyr Pro  
 85 90 95  
 Arg Arg His Arg Gly Ala Ala Arg Arg Ala  
 100 105

<210> 60  
 <211> 705  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 60  
 ccaggacgtc ctggcgcgcc gcctggcgctc cgatgtctcc ctgatggacg tgctcagcaa 60  
 ggcactgcta ctgcagcgcc tgatgttcgc cggcgccaag gagcccaacg tcgccgcca 120  
 cggcctggcc acccaagccg tcgatcagca gaccagcctc ctgcagcagg agatctccaa 180  
 tctcaagacc gaactggaac tccgtcgcga gttggccagc aactcccca tgctgggtcat 240  
 cgagcgcggg caacaacg cctcaggggc cagtggcgctg ttcgagtcgg cgcgcgatgc 300  
 cgatcgctc gatcgctgc agggccctc tgccgcccgc ggcaagtcgg gagggagacc 360  
 gtgatggcag atacgtcac caccgaaag cttctcggtc agctactggt cggagtgtg 420  
 atcgatcatc gactggcagt ggtcggtacg ctgctcagtc tcttcgccct gaaccacttc 480  
 ggtggcatcc agggcctgga ggccctggcg caaagcaact actggagctt gttcgctg 540  
 cggcgctgc tgtactgcgc cctggccatc gcctggttcc ggcagcgcaa ggaactgagc 600  
 gcgcatgagc ggcagcgcat tcggcgatc gagatcctgg tgctgttgct ggtcctgctc 660  
 atcgaattca gcaagccta cttccgcacg ggaggcgacg catga 705

<210> 61  
 <211> 234  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 61  
 Pro Gly Arg Pro Gly Ala Pro Pro Gly Val Arg Cys Leu Pro Asp Gly  
 1 5 10 15  
 Arg Ala Gln Gln Gly Thr Ala Thr Ala Ala Pro Asp Val Arg Arg Arg  
 20 25 30  
 Gln Gly Ala Gln Arg Arg Arg Gln Arg Pro Gly His Pro Ser Arg Arg  
 35 40 45  
 Ser Ala Asp Gln Pro Pro Ala Ala Gly Asp Leu Gln Ser Gln Asp Arg  
 50 55 60  
 Thr Gly Thr Pro Ser Arg Val Gly Gln Gln Leu Pro His Ala Gly His  
 65 70 75 80  
 Arg Ala Arg Ala Thr Thr Arg Leu Arg Val Gln Trp Arg Val Arg Val  
 85 90 95  
 Gly Ala Arg Cys Arg Ser Pro Arg Ser Pro Ala Gly Pro Leu Cys Arg  
 100 105 110  
 Arg Arg Gln Val Gly Arg Glu Thr Val Met Ala Asp Thr Leu Thr Thr  
 115 120 125  
 Arg Lys Leu Leu Gly Gln Leu Leu Val Gly Val Leu Ile Val Ile Gly  
 130 135 140  
 Leu Ala Val Val Gly Thr Leu Leu Ser Leu Phe Ala Leu Asn His Phe  
 145 150 155 160  
 Gly Gly Ile Gln Gly Leu Glu Ala Trp Arg Gln Ser Asn Tyr Trp Ser  
 165 170 175  
 Leu Phe Ala Trp Arg Ala Leu Leu Tyr Cys Ala Leu Ala Ile Ala Trp  
 180 185 190  
 Phe Arg Gln Arg Lys Glu Leu Ser Ala His Glu Arg Gln Arg Ile Arg  
 195 200 205  
 Arg Ile Glu Ile Leu Val Leu Leu Val Leu Leu Ile Glu Phe Ser  
 210 215 220  
 Lys Ala Tyr Phe Arg Thr Gly Gly Ala Ala  
 225 230

<210> 62  
 <211> 525  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 62  
 tgttcgccgg cgccaaggag cccaacgtcg ccgccaacgg cctggccacc caagccgtcg 60  
 atcagcagac cagcctcctg cagcaggaga tctccaatct caagaccgaa ctggaactcc 120  
 gtcgcgagtt ggccagcaac tcccccatgc gggatcatcga gcgcgggcaa caacgcgcct 180  
 caggggtccag tggcgtgttc gagtcggcgc ccgatgccga tcgcctcgat cgctgcagg 240  
 ccccctctgc cgccggcggc aagtcgggag ggagaccgtg atggcagata cgctcaccac 300  
 ccgaaagctt ctcggtcagc tactgggtcgg agtgctgatc gtcatcggac tggcagtggt 360  
 cggtacgctg ctcatgtctt tcgccctgaa ccacttcggt ggcattccagg gcctggaggc 420  
 ctggcggaag agcaactact ggagcttggt cgctggcgg gcgctgctgt actgcgcctt 480  
 ggccatcgcc tggttccggc agcgcaagga actgagcgcg catga 525

<210> 63  
 <211> 174  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 63  
 Cys Ser Pro Ala Pro Arg Ser Pro Thr Ser Pro Pro Thr Ala Trp Pro  
 1 5 10 15  
 Pro Lys Pro Ser Ile Ser Arg Pro Ala Ser Cys Ser Arg Arg Ser Pro  
 20 25 30

Ile	Ser	Arg	Pro	Asn	Trp	Asn	Ser	Val	Ala	Ser	Trp	Pro	Ala	Thr	Pro
		35				40					45				
Pro	Cys	Gly	Ser	Ser	Ser	Ala	Gly	Asn	Asn	Ala	Pro	Gln	Gly	Pro	Val
	50					55					60				
Ala	Cys	Ser	Ser	Arg	Arg	Pro	Met	Pro	Ile	Ala	Ser	Ile	Ala	Cys	Arg
65				70					75					80	
Pro	Pro	Leu	Pro	Pro	Ala	Ala	Ser	Arg	Glu	Gly	Asp	Arg	Asp	Gly	Arg
				85					90					95	
Tyr	Ala	His	His	Pro	Lys	Ala	Ser	Arg	Ser	Ala	Thr	Gly	Arg	Ser	Ala
			100				105						110		
Asp	Arg	His	Arg	Thr	Gly	Ser	Gly	Arg	Tyr	Ala	Ala	Gln	Ser	Leu	Arg
		115					120					125			
Pro	Glu	Pro	Leu	Arg	Trp	His	Pro	Gly	Pro	Gly	Gly	Leu	Ala	Ala	Lys
	130					135					140				
Gln	Leu	Leu	Glu	Leu	Val	Arg	Leu	Ala	Gly	Ala	Ala	Val	Leu	Arg	Pro
145					150					155					160
Gly	His	Arg	Leu	Val	Pro	Ala	Ala	Gln	Gly	Thr	Glu	Arg	Ala		
				165						170					

<210> 64  
 <211> 306  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 64	
agggtcatgct ggcctcccg tgcggaagta ggctttgctg aattcgatga gcaggaccag	60
caacagcacc aggatctcga tccgccgaat gcgctgccgc tcatgcgcgc tcagttcctt	120
gcgctgcccg aaccaggcga tggccagggc gcagtacagc agcgcccgcc aggccaacaa	180
gtccagtag ttgctttgcc gccaggcctc caggccctgg atgccaccga agtgggttcag	240
ggcgaagaga ctgagcagcg taccgaccac tgccagtccg atgacgatca gcactccgac	300
cagtag	306

<210> 65  
 <211> 101  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 65	
Arg Ser Cys Cys Ala Ser Arg Ala Glu Val Gly Phe Ala Glu Phe Asp	
1 5 10 15	
Glu Gln Asp Gln Gln Gln His Gln Asp Leu Asp Pro Pro Asn Ala Leu	
20 25 30	
Pro Leu Met Arg Ala Gln Phe Leu Ala Leu Pro Glu Pro Gly Asp Gly	
35 40 45	
Gln Gly Ala Val Gln Gln Arg Pro Pro Gly Glu Gln Ala Pro Val Val	
50 55 60	
Ala Leu Pro Pro Gly Leu Gln Ala Leu Asp Ala Thr Glu Val Val Gln	
65 70 75 80	
Gly Glu Glu Thr Glu Gln Arg Thr Asp His Cys Gln Ser Asp Asp Asp	
85 90 95	
Gln His Ser Asp Gln	
100	

<210> 66  
 <211> 1605  
 <212> DNA  
 <213> Pseudomonas aeruginosa

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<400> 66
gcggcagcgc attcggcgga tgcgagatcct ggtgctgttg ctggctcctgc tcatcgaatt      60
cagcaaagcc tacttccgca cgggagggcgc agcatgacct tcatgaccaa tgactacctg      120
gagtattacc tcaccctcct cggctggatc atcaacaacg ggatctggaa catgatctcg      180
gatactggcc tggtcgcggt gccgttcgcg gccatcgtga tgcgcgaatg gctgaaagtt      240
cgtggggaag gcgccgacga gggcaacaag ggagtgctgt ctctcgcccc catcgagacg      300
catactctacg tcggctacat cgtggtcgcc ctggcgggga tcccggctcg caacgtgagc      360
ttcgacacca tcgagttcga ccagactcgc gccagcagt gccaatataa tctgccggca      420
ccggcgggaca ccggctggtc gagctccttc agcagcctgg ccggcaagag tgcgcgagatg      480
ccgctctggt gggcgatgat gcacgccctg tccaagggct tcaccagcgg cgccatcgcg      540
gccattccgt gcggcacgga tctgcggcag atgcgaatgg aagtggacaa cacgcgcgtg      600
aacaatccgc tgctggcaca agaaatcgct gatttttcca gagactgcta cgggccttcc      660
cgtgcgcggc tgttcatgcy gcaacccgac ctgggctccg tcgccgagga caacaaggcg      720
ttgcaagacc tgaactggat cggctcccga ttcttggtga acaccccggg gtactacgac      780
accgactact cgaagagtcc ccgtcagtcg tggccctaca acgccacccg cgatgccggc      840
ctgcctcagg tgggcggttg tggcggtctac ccaacctgca agcagtgggt ggctgactca      900
gggatcggct tgcgtgatcg gatcaaggac caggtggatc cggacctgat gaccagcttc      960
ctcaagtggg cgaaatggtt gaaccaggac gaggtgaccg aggctgtcat tcgccagggtg      1020
atctcaccct ccagccaggt caagggtaac gtctacaccg attacggcgg gcaggtgggc      1080
ggcaccgtgt ggaacggcat cgcgagaacc gcaggaacct tcggcgttgc ggtgggcagc      1140
ttggcatact tcccggcgat ggatatggct cgccaggcac tggcgatggt gatgtcgttc      1200
ctgaagatgg caatggtcac ctgcattccg atggtcctgg tcatcggcac ctatcaactg      1260
aaagttgcca tgacgatgac ggtcgtcttc tttgcgatga tgttcgtcga cttctggttt      1320
cagttagcca gatatatcga cagcacgata cttgatgctt tctatggttc gggatcacca      1380
catctttcat tcaacccagt catggggctg aatacggcta ctcaagatgc gatcttgaac      1440
ttcgttatgg gttctatggt cattgtttta ccactactgt ggatgacagc gatcggctgg      1500
tccggaattc aagcagggtc tgttctgaac ggattgagca gagggactga aggagttcaa      1560
gccgccggca aggaagcagg aaatagagtt aaaaacgcag tttga      1605

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<210> 67

<211> 534

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 67

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Ala Ala Ala His Ser Ala Asp Arg Asp Pro Gly Ala Val Ala Gly Pro
 1              5              10              15
Ala His Arg Ile Gln Gln Ser Leu Leu Pro His Gly Arg Arg Ser Met
      20              25              30
Thr Phe Met Thr Asn Asp Tyr Leu Glu Tyr Tyr Leu Thr Leu Leu Gly
      35              40              45
Trp Ile Ile Asn Asn Gly Ile Trp Asn Met Ile Ser Asp Thr Gly Leu
      50              55              60
Phe Ala Val Pro Phe Ala Ala Ile Val Met Arg Glu Trp Leu Lys Val
      65              70              75              80
Arg Gly Glu Gly Ala Asp Glu Gly Asn Lys Gly Val Leu Ser Leu Ala
      85              90              95
Arg Ile Glu Thr His Ile Tyr Val Gly Tyr Ile Val Val Ala Leu Ala
      100             105             110
Gly Ile Pro Val Val Asn Val Ser Phe Asp Thr Ile Glu Phe Asp Gln
      115             120             125
Thr Arg Ala Gln Gln Cys Gln Tyr Asn Leu Pro Ala Pro Ala Asp Thr
      130             135             140
Gly Trp Ser Ser Ser Phe Ser Ser Leu Ala Gly Lys Ser Ala Gln Met
      145             150             155             160
Pro Leu Trp Trp Ala Met Met His Ala Leu Ser Lys Gly Phe Thr Ser
      165             170             175
Gly Ala Ile Ala Ala Ile Pro Cys Gly Thr Asp Leu Arg Gln Met Arg
      180             185             190

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Met Glu Val Asp Asn Thr Arg Val Asn Asn Pro Leu Leu Ala Gln Glu  
 195 200 205  
 Ile Ala Asp Phe Ser Arg Asp Cys Tyr Gly Pro Ser Arg Ala Arg Leu  
 210 215 220  
 Phe Met Arg Gln Pro Asp Leu Gly Ser Val Ala Glu Asp Asn Lys Ala  
 225 230 235 240  
 Leu Gln Asp Leu Asn Trp Ile Gly Ser Arg Phe Leu Leu Asn Thr Pro  
 245 250 255  
 Gly Tyr Tyr Asp Thr Asp Tyr Ser Lys Ser Pro Arg Gln Ser Trp Pro  
 260 265 270  
 Tyr Asn Ala Thr Arg Asp Ala Gly Leu Pro Gln Val Gly Gly Gly Gly  
 275 280 285  
 Gly Tyr Pro Thr Cys Lys Gln Trp Trp Ala Asp Ser Gly Ile Gly Leu  
 290 295 300  
 Arg Asp Arg Ile Lys Asp Gln Val Asp Pro Asp Leu Met Thr Ser Phe  
 305 310 315 320  
 Leu Lys Trp Ala Lys Trp Leu Asn Gln Asp Glu Val Thr Glu Ala Val  
 325 330 335  
 Ile Arg Gln Val Ile Ser Pro Ser Ser Gln Val Lys Gly Asn Val Tyr  
 340 345 350  
 Thr Asp Tyr Gly Gly Gln Val Gly Gly Thr Val Trp Asn Gly Ile Ala  
 355 360 365  
 Arg Thr Ala Gly Thr Phe Gly Val Ala Val Gly Ser Leu Ala Tyr Phe  
 370 375 380  
 Pro Ala Met Asp Met Val Arg Gln Ala Leu Pro Met Val Met Ser Phe  
 385 390 395 400  
 Leu Lys Met Ala Met Val Ile Cys Ile Pro Met Val Leu Val Ile Gly  
 405 410 415  
 Thr Tyr Gln Leu Lys Val Ala Met Thr Met Thr Val Val Phe Phe Ala  
 420 425 430  
 Met Met Phe Val Asp Phe Trp Phe Gln Leu Ala Arg Tyr Ile Asp Ser  
 435 440 445  
 Thr Ile Leu Asp Ala Phe Tyr Gly Ser Gly Ser Pro His Leu Ser Phe  
 450 455 460  
 Asn Pro Val Met Gly Leu Asn Thr Ala Thr Gln Asp Ala Ile Leu Asn  
 465 470 475 480  
 Phe Val Met Gly Ser Met Phe Ile Val Leu Pro Leu Leu Trp Met Thr  
 485 490 495  
 Ala Ile Gly Trp Ser Gly Ile Gln Ala Gly Ser Val Leu Asn Gly Leu  
 500 505 510  
 Ser Arg Gly Thr Glu Gly Val Gln Ala Ala Gly Lys Glu Ala Gly Asn  
 515 520 525  
 Arg Val Lys Asn Ala Val  
 530

<210> 68

<211> 828

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 68

gtcagccac	cactgcttgc	aggttgggta	gccgccacca	ccgcccacct	gaggcaggcc	60
ggcatcgcg	gtggcgttgt	agggccacga	ctgacgggga	ctcttcgagt	agtcggtgtc	120
gtagtacc	ggggtgttca	acaagaatcg	ggagccgatc	cagttcaggt	cttgcaacgc	180
cttggtgtcc	tcggcgacgg	agcccagggtc	gggttgccgc	atgaacagcc	gcgcacggga	240
aggcccgtag	cagtctctgg	aaaaatcagc	gatttcttgt	gccagcagcg	gattgttcac	300
gcgcgtgttg	tccacttcca	ttcgcatctg	ccgcagatcc	gtgccgcacg	gaatggccgc	360
gatggcgccg	ctggtgaagc	ccttggacag	ggcgtgcatc	atcgcccacc	agagcggcat	420

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ctgcgcactc ttgccggcca ggctgctgaa ggagctcgac cagccgggtgt cgcgggtgc 480
cggcagattg tattggcact gctgggcgcg agtctggctg aactcgatgg tgtcgaagct 540
cacgttgacg accgggatcc ccgccagggc gaccacgatg tagccgacgt agatatgcgt 600
ctcgatgcgg gcgagagaca gcactccctt gttgccctcg tcggcgcctt cccacgaac 660
tttcagccat tcgcgcatca cgatggccgc gaacggcacc gcgaacaggc cagtatccga 720
gatcatgttc cagatcccgt tgttgatgat ccagccgagg aggggtgaggt aatactccag 780
gtagtcattg gtcatgaagg tcatgctgcg cctcccgtgc ggaagtag 828

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<210> 69  
 <211> 275  
 <212> PRT  
 <213> Pseudomonas aeruginosa

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<400> 69
Val Ser Pro Pro Leu Leu Ala Gly Trp Val Ala Ala Thr Thr Ala His
 1          5          10          15
Leu Arg Gln Ala Gly Ile Ala Gly Gly Val Val Gly Pro Arg Leu Thr
 20          25          30
Gly Thr Leu Arg Val Val Gly Val Val Val Pro Arg Gly Val Gln Gln
 35          40          45
Glu Ser Gly Ala Asp Pro Val Gln Val Leu Gln Arg Leu Val Val Leu
 50          55          60
Gly Asp Gly Ala Gln Val Gly Leu Pro His Glu Gln Pro Arg Thr Gly
 65          70          75          80
Arg Pro Val Ala Val Ser Gly Lys Ile Ser Asp Phe Leu Cys Gln Gln
 85          90          95
Arg Ile Val His Ala Arg Val Val His Phe His Ser His Leu Pro Gln
 100         105         110
Ile Arg Ala Ala Arg Asn Gly Arg Asp Gly Ala Ala Gly Glu Ala Leu
 115         120         125
Gly Gln Gly Val His His Arg Pro Pro Glu Arg His Leu Arg Thr Leu
 130         135         140
Ala Gly Gln Ala Ala Glu Gly Ala Arg Pro Ala Gly Val Arg Arg Cys
 145         150         155         160
Arg Gln Ile Val Leu Ala Leu Leu Gly Ala Ser Leu Val Glu Leu Asp
 165         170         175
Gly Val Glu Ala His Val Asp Asp Arg Asp Pro Arg Gln Gly Asp His
 180         185         190
Asp Val Ala Asp Val Asp Met Arg Leu Asp Ala Gly Glu Arg Gln His
 195         200         205
Ser Leu Val Ala Leu Val Gly Ala Phe Pro Thr Asn Phe Gln Pro Phe
 210         215         220
Ala His His Asp Gly Arg Glu Arg His Arg Glu Gln Ala Ser Ile Arg
 225         230         235         240
Asp His Val Pro Asp Pro Val Val Asp Asp Pro Ala Glu Glu Gly Glu
 245         250         255
Val Ile Leu Gln Val Val Ile Gly His Glu Gly His Ala Ala Pro Pro
 260         265         270
Val Arg Lys
 275

```

<210> 70  
 <211> 519  
 <212> DNA  
 <213> Pseudomonas aeruginosa

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<400> 70
ctacctggag tattacctca ccctcctcgg ctggatcatc aacaacggga tctggaacat 60

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gatctcggat	actggcctgt	tcgcggtgcc	gttcgcggcc	atcgtgatgc	gcgaatggct	120
gaaagtccgt	ggggaaggcg	ccgacgaggg	caacaaggga	gtgctgtctc	tcgcccgcac	180
cgagacgcat	atctacgtcg	gctacatcgt	ggtcgcctcg	gcggggatcc	cggtcgtcaa	240
cgtgagcttc	gacaccatcg	agttcgacca	gactcgcgcc	cagcagtgcc	aatacaatct	300
gccggcaccg	gcggacaccg	gctggtcgag	ctccttcagc	agcctggccg	gcaagagtgc	360
gcagatgccg	ctctgggtggg	cgatgatgca	cgccctgtcc	aagggcttca	ccagcggcgc	420
catcgcggcc	attccgtgcg	gcacggatct	gcggcagatg	cgaatggaag	tggacaacac	480
gcgcgtgaac	aatccgctgc	tggcacaaga	aatcgctga			519

<210> 71  
 <211> 172  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 71  
 Leu Pro Gly Val Leu Pro His Pro Pro Arg Leu Asp His Gln Gln Arg  
 1 5 10 15  
 Asp Leu Glu His Asp Leu Gly Tyr Trp Pro Val Arg Gly Ala Val Arg  
 20 25 30  
 Gly His Arg Asp Ala Arg Met Ala Glu Ser Ser Trp Gly Arg Arg Arg  
 35 40 45  
 Arg Gly Gln Gln Gly Ser Ala Val Ser Arg Pro His Arg Asp Ala Tyr  
 50 55 60  
 Leu Arg Arg Leu His Arg Gly Arg Pro Gly Gly Asp Pro Gly Arg Gln  
 65 70 75 80  
 Arg Glu Leu Arg His His Arg Val Arg Pro Asp Ser Arg Pro Ala Val  
 85 90 95  
 Pro Ile Gln Ser Ala Gly Thr Gly Gly His Arg Leu Val Glu Leu Leu  
 100 105 110  
 Gln Gln Pro Gly Arg Gln Glu Cys Ala Asp Ala Ala Leu Val Gly Asp  
 115 120 125  
 Asp Ala Arg Pro Val Gln Gly Leu His Gln Arg Arg His Arg Gly His  
 130 135 140  
 Ser Val Arg His Gly Ser Ala Ala Asp Ala Asn Gly Ser Gly Gln His  
 145 150 155 160  
 Ala Arg Glu Gln Ser Ala Ala Gly Thr Arg Asn Arg  
 165 170

<210> 72  
 <211> 333  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

cagtctcttg	aaaaatcagc	gatttcttgt	gccagcagcg	gattgttcac	gcgcgtgttg	60
tccacttcca	ttcgcacatcg	ccgcagatcc	gtgccgcacg	gaatggccgc	gatggcgccg	120
ctggtgaagc	ccttggaacag	ggcgtgcatc	atcgcccacc	agagcggcat	ctgcgcactc	180
ttgccggcca	ggctgctgaa	ggagctcgac	cagccggtgt	ccgccggtgc	cggcagattg	240
tattggcact	gctggggcgcg	agtctggtcg	aactcgatgg	tgtcgaagct	cacgttgacg	300
accgggatcc	ccgccagggc	gaccacgatg	tag			333

<210> 73  
 <211> 110  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 73  
 Gln Ser Leu Glu Lys Ser Ala Ile Ser Cys Ala Ser Ser Gly Leu Phe

1				5					10					15				
Thr	Arg	Val	Leu	Ser	Thr	Ser	Ile	Arg	Ile	Cys	Arg	Arg	Ser	Val	Pro			
			20					25					30					
His	Gly	Met	Ala	Ala	Met	Ala	Pro	Leu	Val	Lys	Pro	Leu	Asp	Arg	Ala			
		35					40					45						
Cys	Ile	Ile	Ala	His	Gln	Ser	Gly	Ile	Cys	Ala	Leu	Leu	Pro	Ala	Arg			
	50				55					60								
Leu	Leu	Lys	Glu	Leu	Asp	Gln	Pro	Val	Ser	Ala	Gly	Ala	Gly	Arg	Leu			
65					70				75						80			
Tyr	Trp	His	Cys	Trp	Ala	Arg	Val	Trp	Ser	Asn	Ser	Met	Val	Ser	Lys			
			85					90					95					
Leu	Thr	Leu	Thr	Thr	Gly	Ile	Pro	Ala	Arg	Ala	Thr	Thr	Met					
			100					105					110					

<210> 74  
 <211> 300  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 74	
ctgaaaccag aagtcgacga acatcatcgc aaagaagacg accgtcatcg tcatggcaac	60
tttcagttga taggtgccga tgaccaggac catcggaatg cagatgacca ttgccatctt	120
caggaacgac atcaccatcg gcagtgcctg gcggaccata tccatcgccg ggaagtatgc	180
caagctgccc accgcaacgc cgaagggttc tgcggttctc gcgatgccgt tccacacggt	240
gccgcccacc tgcccgccgt aatcggtgta gacgttacct ttgacctggc tggaggggtga	300

<210> 75  
 <211> 99  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 75	
Leu Lys Pro Glu Val Asp Glu His His Arg Lys Glu Asp Asp Arg His	
1	5 10 15
Arg His Gly Asn Phe Gln Leu Ile Gly Ala Asp Asp Gln Asp His Arg	
	20 25 30
Asn Ala Asp Asp His Cys His Leu Gln Glu Arg His His His Arg Gln	
	35 40 45
Cys Leu Ala Asp His Ile His Arg Arg Glu Val Cys Gln Ala Ala His	
50	55 60
Arg Asn Ala Glu Gly Ser Cys Gly Ser Arg Asp Ala Val Pro His Gly	
65	70 75 80
Ala Ala His Leu Pro Ala Val Ile Gly Val Asp Val Thr Leu Asp Leu	
	85 90 95
Ala Gly Gly	

<210> 76  
 <211> 306  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 76	
cgtctacacc gattacggcg ggcaggtggg cggcaccgtg tggaacggca tcgcgagaac	60
cgcaggaacc ttcggcggtt cggtgggcag cttggcatac ttcccggcga tggatatggt	120
ccgccaggca ctgccgatgg tgatgtcgtt cctgaagatg gcaatggtca tctgcattcc	180

gatggctcctg gtcacatcgga cctatcaact gaaagttgcc atgacgatga cggtcgtctt	240
ctttgcatg atgttcgtcg acttctgggt tcagtttagcc agatatatcg acagcacgat	300
acttga	306

<210> 77  
 <211> 101  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 77  
 Arg Leu His Arg Leu Arg Arg Ala Gly Gly Arg His Arg Val Glu Arg  
 1 5 10 15  
 His Arg Glu Asn Arg Arg Asn Leu Arg Arg Cys Gly Gly Gln Leu Gly  
 20 25 30  
 Ile Leu Pro Gly Asp Gly Tyr Gly Pro Pro Gly Thr Ala Asp Gly Asp  
 35 40 45  
 Val Val Pro Glu Asp Gly Asn Gly His Leu His Ser Asp Gly Pro Gly  
 50 55 60  
 His Arg His Leu Ser Thr Glu Ser Cys His Asp Asp Gly Arg Leu  
 65 70 75 80  
 Leu Cys Asp Asp Val Arg Arg Leu Leu Val Ser Val Ser Gln Ile Tyr  
 85 90 95  
 Arg Gln His Asp Thr  
 100

<210> 78  
 <211> 387  
 <212> DNA  
 <213> Pseudomonas aeruginosa

gtgatagcag gatgcctccc tttgggagcc aggagattga tgatgaacgc gcacaccaac	60
aaaggctttg cctcccgga cggttttggg ctgggtatgc ttgtgcgttt ctgcctgcat	120
gatcgccgtc cagctctacg ttgggttaag cgagtttagcc tattcttggt agtagctctt	180
gtagtgtcac agaattttat gtggcttgct ggggtatcaa tgactctact gtgtgtcttt	240
ctgggtggggt ttgccttggt taaaggggac atctccgtct cttaaagggtc tccaagtcga	300
gatgtctcaa ctatgacttc acaagctgaa actgaatctg tagcagagct gtttgactat	360
caggcagcac accattaccg ggactag	387

<210> 79  
 <211> 128  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 79  
 Val Ile Ala Gly Cys Leu Pro Leu Gly Ala Arg Arg Leu Met Met Asn  
 1 5 10 15  
 Ala His Thr Asn Lys Gly Phe Ala Ser Arg Ile Gly Phe Gly Leu Gly  
 20 25 30  
 Met Leu Val Arg Phe Cys Leu His Asp Arg Arg Pro Ala Leu Arg Trp  
 35 40 45  
 Val Lys Arg Val Ser Leu Phe Leu Leu Val Ala Leu Val Val Ser Gln  
 50 55 60  
 Asn Phe Met Trp Leu Ala Gly Val Ser Met Thr Leu Leu Cys Val Phe  
 65 70 75 80  
 Leu Val Gly Phe Ala Leu Val Lys Gly Asp Ile Ser Val Ser Lys Gly  
 85 90 95  
 Ser Pro Ser Arg Asp Val Ser Thr Met Thr Ser Gln Ala Glu Thr Glu

	100		105		110
Ser Val Ala	Glu Leu Phe Asp Tyr	Gln Ala Ala His His	Tyr	Tyr Arg Asp	
	115		120	125	

<210> 80  
 <211> 705  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<220>  
 <221> variation  
 <222> (1)...(705)  
 <223> N is any nucleic acid.

<400> 80

tcaaacagct	ctgctacaga	ttcagtttca	gcttgtgaag	tcatagttga	gacatctcga	60
cttggagacc	ctttagagac	ggagatgtcc	cctttaacca	aggcaaatcc	caccagaaag	120
acacacagta	gagtcattga	taccccagca	agccacataa	aattctgtga	cactacaaga	180
gctactaaca	agaataggct	aactcgccta	acccaacgta	gagctggacg	gcgatcatgc	240
aggcagaaac	gcacaagcat	acccagacca	aaaccgatcc	gggaggcaaa	gcctttgttg	300
gtgtgcgct	tcatcatcaa	tctcctggct	cccaaaggga	ggcatcctgc	tatcacctat	360
acgccgaaaa	agatgatttg	gcaagcatta	tggcatatta	tgccactagc	tatctgccga	420
ctggagtacc	tcatggcaac	gcgaaacgtc	gtccttccc	atccgctgga	gcaggatatc	480
aacgagctgg	tggagaccgg	ccgctatcag	aatcgagcgc	aagtcacccg	ggcaggcttg	540
cgctgtctgc	tgcaacagga	agcccagata	ngcgccaagc	tcgaaaccct	ccgcaacgca	600
acatccagtg	ggctgatgca	actggagcgc	ggcgagtacg	acgagatcac	cagcgacgaa	660
ctggcccaat	acctcgacga	gctcggcaac	caggcgagcc	actga		705

<210> 81  
 <211> 233  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 81

Ser Asn Ser	Ser Ala Thr Asp	Ser Val Ser Ala Cys	Glu Val Ile Val
1	5	10	15
Glu Thr Ser	Arg Leu Gly Asp	Pro Leu Glu Thr	Glu Met Ser Pro Leu
	20	25	30
Thr Lys Ala	Asn Pro Thr Arg	Lys Thr His Ser	Arg Val Ile Asp Thr
	35	40	45
Pro Ala Ser	His Ile Lys Phe	Cys Asp Thr Thr	Arg Ala Thr Asn Lys
	50	55	60
Asn Arg Leu	Thr Arg Leu Thr	Gln Arg Arg Ala	Gly Arg Arg Ser Cys
	65	70	75
Arg Gln Lys	Arg Thr Ser Ile	Pro Arg Pro Lys	Pro Ile Arg Glu Ala
	85	90	95
Lys Pro Leu	Leu Val Cys Ala	Phe Ile Ile Asn	Leu Leu Ala Pro Lys
	100	105	110
Gly Arg His	Pro Ala Ile Thr	Tyr Thr Pro Lys	Lys Met Ile Trp Gln
	115	120	125
Ala Leu Trp	His Ile Met Pro	Leu Ala Ile Cys	Arg Leu Glu Tyr Leu
	130	135	140
Met Ala Thr	Arg Asn Val Val	Leu Pro Asp Pro	Leu Glu Gln Asp Ile
	145	150	155
Asn Glu Leu	Val Glu Thr Gly	Arg Tyr Gln Asn	Arg Ser Glu Val Ile
	165	170	175
Arg Ala Gly	Leu Arg Leu Leu	Leu Gln Glu Ala	Gln Ile Ala Lys
	180	185	190

Leu Glu Thr Leu Arg Asn Ala Thr Ser Ser Gly Leu Met Gln Leu Glu  
195 200 205  
Arg Gly Glu Tyr Asp Glu Ile Thr Ser Asp Glu Leu Ala Gln Tyr Leu  
210 215 220  
Asp Glu Leu Gly Asn Gln Ala Ser His  
225 230

<210> 82  
<211> 513  
<212> DNA  
<213> Pseudomonas aeruginosa

<220>  
<221> variation  
<222> (1)...(513)  
<223> N is any nucleic acid.

<400> 82  
agctggacgg cgatcatgca ggcagaaacg cacaagcata cccagaccaa aaccgatccg 60  
ggaggcaaag cctttgttgg tgtgcgcggt catcatcaat ctctgggctc ccaaagggag 120  
gcatcctgct atcacctata cgccgaaaaa gatgatttgg caagcattat ggcatattat 180  
gccactagct atctgccgac tggagtacct catggcaacg cgaaacgtcg tccttcccga 240  
tccgctggag caggatatca acgagctggg ggagaccggc cgctatcaga atcgagcga 300  
agtcattccg gcaggcttgc gcctgctgct gcaacaggaa gccagatan gcgccaagct 360  
cgaaaccctc cgcaacgcaa catccagtgg gctgatgcaa ctggagcgcg gcgagtacga 420  
cgagatcacc agcgacgaac tggcccaata cctcgacgag ctcggaacc aggcgagcca 480  
ctgaagcatg gccaaagtacc gcatctctca tga 513

<210> 83  
<211> 169  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 83  
Ser Trp Thr Ala Ile Met Gln Ala Glu Thr His Lys His Thr Gln Thr  
1 5 10 15  
Lys Thr Asp Pro Gly Gly Lys Ala Phe Val Gly Val Arg Val His His  
20 25 30  
Gln Ser Pro Gly Ser Gln Arg Glu Ala Ser Cys Tyr His Leu Tyr Ala  
35 40 45  
Glu Lys Asp Asp Leu Ala Ser Ile Met Ala Tyr Tyr Ala Thr Ser Tyr  
50 55 60  
Leu Pro Thr Gly Val Pro His Gly Asn Ala Lys Arg Arg Pro Ser Arg  
65 70 75 80  
Ser Ala Gly Ala Gly Tyr Gln Arg Ala Gly Gly Asp Arg Pro Leu Ser  
85 90 95  
Glu Ser Gln Arg Ser His Pro Gly Arg Leu Ala Pro Ala Ala Ala Thr  
100 105 110  
Gly Ser Pro Asp Arg Gln Ala Arg Asn Pro Pro Gln Arg Asn Ile Gln  
115 120 125  
Trp Ala Asp Ala Thr Gly Ala Arg Arg Val Arg Arg Asp His Gln Arg  
130 135 140  
Arg Thr Gly Pro Ile Pro Arg Arg Ala Arg Gln Pro Gly Glu Pro Leu  
145 150 155 160  
Lys His Gly Gln Val Pro His Leu Ser  
165

<210> 84  
 <211> 591  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<220>  
 <221> variation  
 <222> (1)...(591)  
 <223> N is any nucleic acid.

<400> 84  
 cacctggtct gtcgccaccc ggtagaagac gaagtgcctg ggccgaacaa cttaccgac 60  
 attgggcatc gagtggcagt aaacgaggtg gatgctgcgc aggccagctc ccagttcttc 120  
 acggctgatg ctgcctacct gttgtgggtc tgtcgcaact gcttcacgag cgcgccctat 180  
 gagtgcctgg taacgtcggc gcgcggcatc gccgaagtgg ttgtgggtga agcgcaggat 240  
 atcgacgatg tccgcttggg catcatgaga gatgcggtac ttggccatgc ttcagtggct 300  
 cgcttggttg ccgagctcgt cgaggtattg ggccagttcg tcgctgggtga tctcgtcgta 360  
 ctgcgcgcgc tccagttgca tcagcccact ggatggtgcg ttgcggaggg ttctgagctt 420  
 ggcgcntatc tgggcttcct gttgcagcag caggcgcaag cctgcccgga tgacttcgct 480  
 gcgattctga tagcggccgg tctccaccag ctcggttgata tcctgctcca gcggatcggg 540  
 aaggacgacg tttcgcgttg ccatgaggta ctccagtcgg cagatagcta g 591

<210> 85  
 <211> 195  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 85  
 His Leu Val Cys Arg His Pro Val Glu Asp Glu Val Pro Gly Pro Asn  
 1 5 10 15  
 Asn Leu Thr Asp Ile Gly His Arg Val Ala Val Asn Glu Val Asp Ala  
 20 25 30  
 Ala Gln Ala Ser Ser Gln Phe Phe Thr Ala Asp Ala Ala Tyr Leu Leu  
 35 40 45  
 Trp Val Cys Arg Asn Cys Phe Gln Arg Arg Pro Tyr Glu Cys Leu Val  
 50 55 60  
 Thr Ser Ala Arg Gly Ile Ala Glu Val Val Val Gly Glu Ala Gln Asp  
 65 70 75 80  
 Ile Asp Asp Val Arg Leu Gly Ile Met Arg Asp Ala Val Leu Gly His  
 85 90 95  
 Ala Ser Val Ala Arg Leu Val Ala Glu Leu Val Glu Val Leu Gly Gln  
 100 105 110  
 Phe Val Ala Gly Asp Leu Val Val Leu Ala Ala Leu Gln Leu His Gln  
 115 120 125  
 Pro Thr Gly Cys Cys Val Ala Glu Gly Phe Glu Leu Gly Tyr Leu Gly  
 130 135 140  
 Phe Leu Leu Gln Gln Gln Ala Gln Ala Cys Pro Asp Asp Phe Ala Ala  
 145 150 155 160  
 Ile Leu Ile Ala Ala Gly Leu His Gln Leu Val Asp Ile Leu Leu Gln  
 165 170 175  
 Arg Ile Gly Lys Asp Asp Val Ser Arg Cys His Glu Val Leu Gln Ser  
 180 185 190  
 Ala Asp Ser  
 195

<210> 86  
 <211> 354  
 <212> DNA

<213> Pseudomonas aeruginosa

<400> 86

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agcatggcca agtaccgcat ctctcatgat gcccaagcgg acatcgtcga taccctgcgc      60
ttcaccacaca accacttcgg cgatgccgcg cgccgacggt accaggcact catagggggcg    120
gcgctggaag cagttgcgac agaccacaaa caggtaggca gcatcagccg tgaagaactg     180
ggagctggcc tgcgcagcat ccacctcggt tactgccact cgatgcccac tgcgggtaag     240
gttggttcggc ccaggcactt cgtctttctac cgggtggcga cagaccagggt gctagagggtg   300
gttcgcgtgc ttcacgacgc catggatgtg gatcaacacc tgccccaacg atga           354
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<210> 87

<211> 117

<212> PRT

<213> Pseudomonas aeruginosa

<400> 87

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Ser Met Ala Lys Tyr Arg Ile Ser His Asp Ala Gln Ala Asp Ile Val
 1          5          10          15
Asp Ile Leu Arg Phe Thr His Asn His Phe Gly Asp Ala Ala Arg Arg
      20          25          30
Arg Tyr Gln Ala Leu Ile Gly Ala Ala Leu Glu Ala Val Ala Thr Asp
      35          40          45
Pro Gln Gln Val Gly Ser Ile Ser Arg Glu Glu Leu Gly Ala Gly Leu
      50          55          60
Arg Ser Ile His Leu Val Tyr Cys His Ser Met Pro Asn Val Gly Lys
      65          70          75          80
Val Val Arg Pro Arg His Phe Val Phe Tyr Arg Val Ala Thr Asp Gln
      85          90          95
Val Leu Glu Val Val Arg Val Leu His Asp Ala Met Asp Val Asp Gln
      100         105         110
His Leu Pro Gln Arg
      115
```

<210> 88

<211> 330

<212> DNA

<213> Pseudomonas aeruginosa

<400> 88

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agccgcatgc aagcgggtggt cagcacgaat gcaaatgctt ggtcagggggg aatgcaatcg      60
agtgggtcaag ccaactgctat tgcgcatcaa ccatgggggca cctgctgggtg gatgttcacc   120
cgtagccttt tcgtgttcgc cggcgcgaaac gcagcccttt ctgccttcgc gcaggccctt     180
tcgggtaggg cttttaccct tgtgaaccat tcccttcgcc cttcaagccc atttccctt     240
tgggccattt gctcctgtta cagttgctca tcgttggggc aggtgttgat ccacatccat     300
ggcgtcgtga agcacgcgaa ccacctctag                                     330
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<210> 89

<211> 109

<212> PRT

<213> Pseudomonas aeruginosa

<400> 89

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Ser Arg Met Gln Ala Val Val Ser Thr Asn Ala Asn Ala Trp Ser Gly
 1          5          10          15
Gly Met Gln Ser Ser Gly Gln Ala Thr Ala Ile Ala His Gln Pro Trp
      20          25          30
Gly Thr Cys Trp Trp Met Phe Thr Arg Ser Leu Phe Val Phe Ala Gly
      35          40          45
```



```

ggggagcaag ctgtggaggc gggcgcgga gacgcggctg cggtggtggc cgatgccggc 540
gagtacaagc cttggccaga aagcctgacg aagtaccta caaaggaact gagcaaggaa 600
tacaccttcc gctactacgt gctcgatgag cgggcttttg tcggctatca ggcaagggag 660
gccgactacg agccgctacc cctaggcaag gagccgggcg gtgcagccat tctcaagtcg 720
ctgggtgaggg tcgacttcct gcgcgcgcag cggcacctcg atgacccaga tgccggtagc 780
tctgatcgcg cagagagctt gtcgcggcgt ctgagcaggt tctatcaccg caacctggag 840
aagcgtggcg acgaccatgc ggctctcaag gcgctagata cctcggagaa ggagctgaac 900
ttccacctga aggaagtctt caatgacacc ctcacgcgcc tggccaagct cggctatccg 960
ggcgtcaaca atccggagat cgtgattcgg gcggccttgg atccgaccac tgtcttgggg 1020
caagacgcca aggttacta cgtgatcccg ggcgtagctt ccgccaact gccagacagc 1080
tacaatggcc tggggttcaa gaatctggtc tacatgggtg ttgagctgct cgacttgac 1140
gagcagtgga aagccgagga tgacaagcga gctccgcttc atttggctct cattgaggag 1200
cctgaggcgc atctgcacgc gcagatccag cagggtcttca tcaggaacgt tttgcgcctc 1260
cttgaggatg ctaacgatca cgcgactttg ttccacacgc agctcgtcat caccacgcac 1320
tccccgcaca tcctctatga acgcggattc tcgcccattc ggtacttccg ccgcgtcaac 1380
gaccagttgg gccatcacac ggatgtgcgc aatctgtcgc tattcaaaac gggcgcgctc 1440
gacgctccag cgcgcgaatt cctgcagcgg tatctgaagc tgacgcactg cgatctcttt 1500
ttttccgacg cggtgatatt ggtggaaggc aacgtcgagc gtctgctcct gcctgcaatg 1560
atcgagttgg tggccaagcg cctgcgttct tccgccctaa ccatccttga agtcggtgg 1620
acggttcgcg atcgggtcca ggagctgac gccttcggtg ggctcacaac actggtcatc 1680
cgggatctgg acagcgtgac ggtcaagacg gacgccgaga aggccgccgc gcaaggcgca 1740
ggcgtgagg gcgccgttga cggagatgac gaggacgagg acgacgacct gaagcccttc 1800
gagcttgaag acgacgacga agcagaaccg agtggaaga agaagtcaa gaagcgtggc 1860
agcacctgcc atgcacacgt ggaagggtgcc gtcacgtcca accaaacct catcagctgg 1920
atcccgaaga agcgggtcgat ggcagagctc tgggaagtca cggcgaggca aaagacgctg 1980
tcgctggctg aggattccag cgctgggggt cgggtagctt accagaccaa ggtttcggtg 2040
acggtgggtg cgacgacatc acagctctgc ggccgcacac ttgaggaggc ctttggctct 2100
gagaacgcgg actggtgcca ggctgaggca aaccggtcgg tcggcctcaa gctcaagcgc 2160
gcaccgagca gccctgaaga gctggctgag aagttacacg ataggggtgg cggcaagaac 2220
ttcgacaaga cccgctttgc gctggaggta ctcgcaagcg ggccgctcaa tggctggaag 2280
gttccgcgt acatcgccga gggcttggcc tggctcgaag ccaaagtggc ccacgagctt 2340
gagggcgatg ctgccatcgc caccgaggtc gcgactattg agccgactac agccgatgtt 2400
gtcgctatca ttgttgaccc ggggcagacg gcatga 2436

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<210> 93  
<211> 811  
<212> PRT  
<213> *Pseudomonas aeruginosa*

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<400> 93
Glu Glu Val Ile Met Lys Leu Gln Ala Tyr Arg Leu Gln Asn Tyr Arg
 1          5          10          15
Arg Leu Arg Asp Val Val Ile Glu Leu Asp Asp Glu Ile Ser Ile Phe
 20          25          30
Val Gly Ala Asn Asn Ser Gly Lys Thr Ser Ala Val Gln Gly Leu Tyr
 35          40          45
Ser Met Leu Arg Gly Glu Val Lys Lys Phe Glu Leu Phe Asp Phe Ser
 50          55          60
Ala Ala Leu Trp Ala Glu Ile Asp Ala Val Gly Arg Thr Pro Pro Gly
 65          70          75          80
Asp Glu Asp Ala Pro Lys Arg Leu Pro Ser Ile Leu Leu Asp Leu Trp
 85          90          95
Phe Arg Val Gly Glu Asp Asp Leu Ala Thr Ala Met Ser Leu Leu Pro
100          105          110
Ser Thr Glu Trp Asp Gly Lys Cys Val Gly Ile Arg Val Ala Phe Glu
115          120          125
Pro Arg Asp Ala His Glu Leu Val Trp Lys Phe His Glu Leu His Glu
130          135          140
Lys Ala Asn Asn Ala Ala Val Ala Leu Ala Ala Lys Arg Lys Ala Ala

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145					150					155					160
Gly	Glu	Gln	Ala	Val	Glu	Ala	Gly	Ala	Glu	Asp	Ala	Ala	Ala	Val	Val
				165					170					175	
Ala	Asp	Ala	Gly	Glu	Tyr	Lys	Pro	Trp	Pro	Glu	Ser	Leu	Thr	Lys	Tyr
			180					185					190		
Leu	Thr	Lys	Glu	Leu	Ser	Lys	Glu	Tyr	Thr	Phe	Arg	Tyr	Tyr	Val	Leu
		195					200					205			
Asp	Glu	Arg	Ala	Phe	Val	Gly	Tyr	Gln	Ala	Arg	Glu	Ala	Asp	Tyr	Glu
	210					215					220				
Pro	Leu	Pro	Leu	Gly	Lys	Glu	Pro	Gly	Gly	Ala	Ala	Ile	Leu	Lys	Ser
225					230					235					240
Leu	Val	Arg	Val	Asp	Phe	Leu	Arg	Ala	Gln	Arg	His	Leu	Asp	Asp	Pro
				245					250					255	
Asp	Ala	Gly	Ser	Ser	Asp	Arg	Ala	Glu	Ser	Leu	Ser	Arg	Arg	Leu	Ser
		260						265					270		
Arg	Phe	Tyr	His	Arg	Asn	Leu	Glu	Lys	Arg	Gly	Asp	Asp	His	Ala	Ala
	275						280					285			
Leu	Lys	Ala	Leu	Asp	Thr	Ser	Glu	Lys	Glu	Leu	Asn	Phe	His	Leu	Lys
	290					295					300				
Glu	Val	Phe	Asn	Asp	Thr	Leu	Thr	Arg	Leu	Ala	Lys	Leu	Gly	Tyr	Pro
305					310					315					320
Gly	Val	Asn	Asn	Pro	Glu	Ile	Val	Ile	Arg	Ala	Ala	Leu	Asp	Pro	Thr
				325					330					335	
Thr	Val	Leu	Gly	Gln	Asp	Ala	Lys	Val	His	Tyr	Val	Ile	Pro	Gly	Val
			340					345					350		
Ala	Ser	Ala	Gln	Leu	Pro	Asp	Ser	Tyr	Asn	Gly	Leu	Gly	Phe	Lys	Asn
	355						360					365			
Leu	Val	Tyr	Met	Val	Val	Glu	Leu	Leu	Asp	Leu	His	Glu	Gln	Trp	Lys
	370					375					380				
Ala	Glu	Asp	Asp	Lys	Arg	Ala	Pro	Leu	His	Leu	Val	Phe	Ile	Glu	Glu
385					390					395					400
Pro	Glu	Ala	His	Leu	His	Ala	Gln	Ile	Gln	Gln	Val	Phe	Ile	Arg	Asn
				405					410					415	
Val	Leu	Arg	Leu	Leu	Glu	Asp	Ala	Asn	Asp	His	Ala	Thr	Leu	Phe	His
			420					425					430		
Thr	Gln	Leu	Val	Ile	Thr	Thr	His	Ser	Pro	His	Ile	Leu	Tyr	Glu	Arg
	435						440					445			
Gly	Phe	Ser	Pro	Ile	Arg	Tyr	Phe	Arg	Arg	Val	Asn	Asp	Gln	Leu	Gly
	450					455					460				
His	His	Thr	Asp	Val	Arg	Asn	Leu	Ser	Leu	Phe	Lys	Thr	Gly	Ala	Ser
465					470					475					480
Asp	Ala	Pro	Ala	Arg	Glu	Phe	Leu	Gln	Arg	Tyr	Leu	Lys	Leu	Thr	His
				485					490					495	
Cys	Asp	Leu	Phe	Ser	Asp	Ala	Val	Ile	Leu	Val	Glu	Gly	Asn	Val	
		500					505					510			
Glu	Arg	Leu	Leu	Pro	Ala	Met	Ile	Glu	Leu	Val	Ala	Lys	Arg	Leu	
	515					520					525				
Arg	Ser	Ser	Ala	Leu	Thr	Ile	Leu	Glu	Val	Gly	Gly	Ala	Phe	Ala	His
	530					535					540				
Arg	Phe	Gln	Glu	Leu	Ile	Ala	Phe	Val	Gly	Leu	Thr	Thr	Leu	Val	Ile
545					550					555					560
Thr	Asp	Leu	Asp	Ser	Val	Thr	Val	Lys	Thr	Asp	Ala	Glu	Lys	Ala	Ala
				565					570					575	
Ala	Gln	Gly	Ala	Gly	Ala	Glu	Gly	Ala	Val	Asp	Gly	Asp	Asp	Glu	Asp
			580				585					590			
Glu	Asp	Asp	Asp	Leu	Lys	Pro	Phe	Glu	Leu	Glu	Asp	Asp	Asp	Glu	Ala
	595						600					605			
Glu	Pro	Ser	Gly	Lys	Lys	Lys	Ser	Lys	Lys	Arg	Gly	Ser	Thr	Cys	His
	610					615					620				

Ala	His	Val	Glu	Gly	Ala	Val	Thr	Ser	Asn	Gln	Thr	Leu	Ile	Ser	Trp
625					630					635					640
Ile	Pro	Lys	Lys	Arg	Ser	Met	Ala	Glu	Leu	Trp	Glu	Val	Thr	Ala	Glu
				645					650					655	
Gln	Lys	Thr	Leu	Ser	Leu	Ala	Glu	Asp	Ser	Ser	Ala	Gly	Val	Arg	Val
			660					665					670		
Ala	Tyr	Gln	Thr	Lys	Val	Ser	Val	Thr	Val	Gly	Ala	Thr	Thr	Ser	Gln
		675					680					685			
Leu	Cys	Gly	Arg	Thr	Leu	Glu	Glu	Ala	Phe	Gly	Leu	Glu	Asn	Ala	Asp
	690					695				700					
Trp	Cys	Gln	Ala	Glu	Ala	Asn	Arg	Ser	Val	Gly	Leu	Lys	Leu	Lys	Arg
705				710						715					720
Ala	Pro	Ser	Ser	Pro	Glu	Glu	Leu	Ala	Glu	Lys	Leu	His	Asp	Arg	Val
				725					730				735		
Val	Gly	Lys	Asn	Phe	Asp	Lys	Thr	Arg	Phe	Ala	Leu	Glu	Val	Leu	Ala
			740				745					750			
Ser	Gly	Pro	Leu	Asn	Gly	Trp	Lys	Val	Pro	Ala	Tyr	Ile	Ala	Glu	Gly
	755				760						765				
Leu	Ala	Trp	Leu	Glu	Ala	Lys	Val	Ala	His	Glu	Leu	Glu	Ala	Asp	Ala
	770				775					780					
Ala	Ile	Ala	Thr	Glu	Val	Ala	Thr	Ile	Glu	Pro	Thr	Thr	Ala	Asp	Val
785				790					795						800
Val	Ala	Ile	Ile	Val	Asp	Pro	Gly	Gln	Thr	Ala					
			805					810							

<210> 94  
 <211> 570  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 94	
cggaagggtgt attccttgct cagttccttt gtgagggtact tcgtcagggt ttctggccaa	60
ggcttggtact cgccggcatc ggccaccacc gcagccgcgt cttccgcgcc cgcctccaca	120
gcttgctccc cggcggcctt gcgcttgcc gcaagcgcca cagctgcgtt gttggccttc	180
tcatgtagtt catggaactt ccagacgagc tcgtgggcat cccgaggctc gaacgctacc	240
cggatcccga cgcacttgcc gtcccactca gtgctcggca gcagcgacat cgcagtggcg	300
aggctcgtctt caccgacgcg gaaccagaga tccaagagta tggacggtaa ccttttgggc	360
gcctcctcat cgccaggggg cgtcctgccc accgcatcga tctcggccca cagcgccgca	420
ctgaagtcaa agagctcgaa cttcttcact tcgccgcgaa gcattgagta caggccttgg	480
acggcggtatg tcttcccgcgt gttgttgcca ccgacaaaga tagaaatttc gtcctcgagc	540
tcgatgacaa catcgcgag cggcggtag	570

<210> 95  
 <211> 189  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 95	
Arg Lys Val Tyr Ser Leu Leu Ser Ser Phe Val Arg Tyr Phe Val Arg	
1 5 10 15	
Leu Ser Gly Gln Gly Leu Tyr Ser Pro Ala Ser Ala Thr Thr Ala Ala	
20 25 30	
Ala Ser Ser Ala Pro Ala Ser Thr Ala Cys Ser Pro Ala Ala Leu Arg	
35 40 45	
Leu Ala Ala Ser Ala Thr Ala Ala Leu Leu Ala Phe Ser Cys Ser Ser	
50 55 60	
Trp Asn Phe Gln Thr Ser Ser Trp Ala Ser Arg Gly Ser Asn Ala Thr	
65 70 75 80	

Arg	Ile	Pro	Thr	His	Leu	Pro	Ser	His	Ser	Val	Leu	Gly	Ser	Ser	Asp
				85					90					95	
Ile	Ala	Val	Ala	Arg	Ser	Ser	Ser	Pro	Thr	Arg	Asn	Gln	Arg	Ser	Lys
			100					105					110		
Ser	Met	Asp	Gly	Asn	Leu	Leu	Gly	Ala	Ser	Ser	Ser	Pro	Gly	Gly	Val
		115					120					125			
Leu	Pro	Thr	Ala	Ser	Ile	Ser	Ala	His	Ser	Ala	Ala	Leu	Lys	Ser	Lys
		130					135				140				
Ser	Ser	Asn	Phe	Phe	Thr	Ser	Pro	Arg	Ser	Ile	Glu	Tyr	Arg	Pro	Trp
145					150					155					160
Thr	Ala	Asp	Val	Phe	Pro	Leu	Leu	Leu	Ala	Pro	Thr	Lys	Ile	Glu	Ile
			165						170					175	
Ser	Ser	Ser	Ser	Ser	Met	Thr	Thr	Ser	Arg	Ser	Arg	Arg			
			180					185							

<210> 96  
 <211> 390  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 96	
ggtacttcgt caggctttct ggccaaggct tgtactcgcc ggcacgcggcc accaccgcag	60
ccgcgtcttc cgcgcccgcc tccacagctt gctccccggc ggccttgccg ttggccgcaa	120
gcgcgacagc tgcgttggtg gccttctcat gtagttcatg gaacttccag acgagctcgt	180
gggcatcccg aggctcgaac gctacccgga tcccgcagca cttgccgtcc cactcagtgc	240
tcggcagcag cgacatcgca gtggcgaggt cgtcttcacc gacgcggaac cagagatcca	300
agagtatgga cgtaacctt ttgggcgcat cctcatcgcc agggggcgctc ctgccgaccg	360
catcgatctc ggcccacagc gccgcactga	390

<210> 97  
 <211> 129  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 97	
Gly Thr Ser Ser Gly Phe Leu Ala Lys Ala Cys Thr Arg Arg His Arg	
1 5 10 15	
Pro Pro Pro Gln Pro Arg Leu Pro Arg Pro Pro Pro Gln Leu Ala Pro	
20 25 30	
Arg Arg Pro Cys Ala Trp Pro Gln Ala Arg Gln Leu Arg Cys Trp Pro	
35 40 45	
Ser His Val Val His Gly Thr Ser Arg Arg Ala Arg Gly His Pro Glu	
50 55 60	
Ala Arg Thr Leu Pro Gly Ser Arg Arg Thr Cys Arg Pro Thr Gln Cys	
65 70 75 80	
Ser Ala Ala Ala Thr Ser Gln Trp Arg Gly Arg Leu His Arg Arg Gly	
85 90 95	
Thr Arg Asp Pro Arg Val Trp Thr Val Thr Phe Trp Ala His Pro His	
100 105 110	
Arg Gln Gly Ala Ser Cys Arg Pro His Arg Ser Arg Pro Thr Ala Pro	
115 120 125	
His	

<210> 98  
 <211> 546  
 <212> DNA

<213> Pseudomonas aeruginosa

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<400> 98
cgacagattg cgcacatccg tgtgatggcc caactgggtcg ttgacgcggc ggaagtaccg      60
aatgggagag aatccgcgtt catagaggat gtgcggggag tgcgtggtga tgacgagctg      120
cgtgtggaac aaagtcgcgt gatcgttagc atcctcaagg aggcgcaaaa cgttcctgat      180
gaagacctgc tggatctgcg cgtgcagatg cgcctcaggc tcctcaatga agaccaaagc      240
aagcggagct cgcttgatcat cctcggcttt ccactgctcg tgcaagtcga gcagctcaac      300
caccatgtag accagattct tgaacccag gccattgtag ctgtctggca gttgggagga      360
agctacgccc gggatcacgt agtgaacctt ggcgtcttgc cccaagacag tggtcggatc      420
caaggccgcc cgaatcacga tctccggatt gttgacgccc ggatagccga gcttggccag      480
gcgcgtgagg gtgtcattga agacttcctt cagggtggaag ttcagctcct tctccgaggt      540
atctag
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<210> 99

<211> 181

<212> PRT

<213> Pseudomonas aeruginosa

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<400> 99
Arg Gln Ile Ala His Ile Arg Val Met Ala Gln Leu Val Val Asp Ala
1      5      10      15
Ala Glu Val Pro Asn Gly Arg Glu Ser Ala Phe Ile Glu Asp Val Arg
20     25     30
Gly Val Arg Gly Asp Asp Glu Leu Arg Val Glu Gln Ser Arg Val Ile
35     40     45
Val Ser Ile Leu Lys Glu Ala Gln Asn Val Pro Asp Glu Asp Leu Leu
50     55     60
Asp Leu Arg Val Gln Met Arg Leu Arg Leu Leu Asn Glu Asp Gln Met
65     70     75     80
Lys Arg Ser Ser Leu Val Ile Leu Gly Phe Pro Leu Leu Val Gln Val
85     90     95
Glu Gln Leu Asn His His Val Asp Gln Ile Leu Glu Pro Gln Ala Ile
100    105    110
Val Ala Val Trp Gln Leu Gly Gly Ser Tyr Ala Arg Asp His Val Val
115    120    125
Asn Leu Gly Val Leu Pro Gln Asp Ser Gly Arg Ile Gln Gly Arg Pro
130    135    140
Asn His Asp Leu Arg Ile Val Asp Ala Arg Ile Ala Glu Leu Gly Gln
145    150    155    160
Ala Arg Glu Gly Val Ile Glu Asp Phe Leu Gln Val Glu Val Gln Leu
165    170    175
Leu Leu Arg Gly Ile
180
```

<210> 100

<211> 420

<212> DNA

<213> Pseudomonas aeruginosa

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<400> 100
cttccgcccc actgccagac agctacaatg gcctgggggtt caagaatctg gtctacatgg      60
tggttgagct gctcgacttg caccgagcagt ggaaagccga ggatgacaag cgagctccgc      120
ttcatttggg cttcattgag gagcctgagg cgcattctgca cgcgcgact cagcaggtct      180
tcattcaggaa cgtttttgcgc ctctttgagg atgctaacga tcacgcgact ttgttccaca      240
cgcagctcgt catcaccacg cactccccgc acatcctcta tgaacgcgga ttctcgccca      300
ttcgggtactt ccgccgcgtc aacgaccagt tgggccatca cacggatgtg cgcaatctgt      360
cgctattcaa aacgggagcg tccgacgctc cagcgcgcga attcctgcag cggtatctga      420
```

<210> 101  
 <211> 139  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 101  
 Leu Pro Pro Asn Cys Gln Thr Ala Thr Met Ala Trp Gly Ser Arg Ile  
   1                  5                  10                  15  
 Trp Ser Thr Trp Trp Leu Ser Cys Ser Thr Cys Thr Ser Ser Gly Lys  
           20                  25                  30  
 Pro Arg Met Thr Ser Glu Leu Arg Phe Ile Trp Ser Ser Leu Arg Ser  
           35                  40                  45  
 Leu Arg Arg Ile Cys Thr Arg Arg Ser Ser Arg Ser Ser Ser Gly Thr  
   50                  55                  60  
 Phe Cys Ala Ser Leu Arg Met Leu Thr Ile Thr Arg Leu Cys Ser Thr  
   65                  70                  75                  80  
 Arg Ser Ser Ser Ser Pro Arg Thr Pro Arg Thr Ser Ser Met Asn Ala  
           85                  90                  95  
 Asp Ser Arg Pro Phe Gly Thr Ser Ala Ala Ser Thr Thr Ser Trp Ala  
          100                 105                 110  
 Ile Thr Arg Met Cys Ala Ile Cys Arg Tyr Ser Lys Arg Ala Arg Pro  
          115                 120                 125  
 Thr Leu Gln Arg Ala Asn Ser Cys Ser Gly Ile  
       130                 135

<210> 102  
 <211> 2101  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 102  
 caaagcataa gaccaagatg gcacattgcc aacaaaatac ctttccccgc taccgttggt 60  
 ttatcgttgt tgccagccct gatctggcgg aaaagcccgc tccatgaatc gtcattggagc 120  
 ctcccatggt tcaactcctt tcctggatat ccaggaagcc gtccccacc ccaacaacca 180  
 aagctgcccc aggggggattc atccttcctc tgagcagcat ggaactgctc ggcacgcctc 240  
 gccgcggcca gctactggag aacatctggc agcgcgcctc gctatccaag cagcaattcg 300  
 aggagatcta ccggcggcca ctggccaact atgccgagct ggtccagcag ctccctgctt 360  
 cggaataatca tcaccatgcc catccaggcg ggatgatcga tcacggcctg gagatcgtgg 420  
 cctacgcact caaggtacgg cagacctacc tgctcccgat cggcgcagcg ccggagtcac 480  
 agtcagccca ggctgaagcc tggtcggccg ccgcggcgta tggcgccctg gctcatgaca 540  
 taggcaagat cgtcgtcgac ctgcagggtg agctacagga cggcagcacc tggcaccctt 600  
 ggaacggacc gatcaaccag ccataccgct tcaagtacgt gaagtcccgc gaataccagc 660  
 tccacggcgc tgccctcagca cttctcatcc accaactgct accgcgcact gcaactcgatt 720  
 ggctcagtcg ctttccagag ctgtgggctc aattgatcta cctgttcgct gggcagtagc 780  
 agcacgcggg gatcctcggc gagatcatcg tgaaggcaga ccaggcctca gttgcacagg 840  
 agctaggagg caatccggat cgagctcttg ctgcaccgaa gcagtcgctg cagcggcagt 900  
 tggcagacgg ccttcgcttc ttgggtgaagg acaagttcaa gttgaatcaa cctagcggcc 960  
 cgtctgatgg atggctgacc caggacgcac tctggctggg gagcaagcct gctgccgatc 1020  
 aactgagagc ctacctgctg gcccagggta tcgatggggt gccctcctct aacgcgccgt 1080  
 tcttcagcat gtcaccagg caagccgtca tccagacaaa tgccgaggac aaggccattt 1140  
 ggacggccac ggtgctggat ggagaaacaa gttcacgcta ctcaagattg 1200  
 tccagcctt gatctggaca gatgctgcc agcgcctc accctacagc ggatcactgg 1260  
 tcgttgaaga tggaaccgcc tcaacggaaa agccggaaa gacctgtgaa attcccaacg 1320  
 ggccggctga acagcagcaa gcaccagaaa cgaagatgat gctccatcaa cctgcgccga 1380  
 gcgttgcgaa accggcaaac gagacgcagg cgattgcgaa accctcaact gatgatcaag 1440  
 aagaaacaga cgatttgtat gcacttcttg gtaatatcaa ttgcgacta gaagagctag 1500  
 aactagcca cgactcgccg gctgcctctc ctacgaacac acgcggggag gagaacctac 1560

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agcagccact agggaccaag gagccaacag attgcgctcc tgaagcaatt gaagatgtat 1620
ttatgcctag cagaagtact gatctgggac agggattcgt tggttggatg aaatctggca 1680
tcgcggccccg tcgcctgttc atcaacgaca ccaaggcttt ggtgcatacc gtagacggga 1740
ccgccatgct ggtcacgcca ggaattttca agcgctatgt ccaagagcat ccggtgcttg 1800
aaaaactggc ccaagccaag gagacgaccg gctggaagct ggtgcagcgc gcgttcgaaa 1860
aacaggggct tcatcggaag accagtaaaa acctgaacat ctggaccatc aaggtttctg 1920
gtcctcgcaa gacgaaagag ctcaaggcct acctgctcca ggatcccaaa ttgctgttcc 1980
ctgagcagcc tctggacaac ccaagcctca cggtcatcac cgatgccgaa ggaggtgtgg 2040
aatgacgccg cagcagctca ccgaggagta catcttcgcg cacgatctcc gggaagccag 2100
c 2101

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<210> 103  
 <211> 641  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

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<400> 103
Met Asn Arg His Gly Ala Ser His Val Ser Thr Pro Phe Leu Asp Ile
1      5      10      15
Gln Glu Ala Val Pro His Pro Asn Asn Gln Ser Cys Pro Arg Gly Ile
20     25     30
His Pro Ser Ser Glu Gln His Gly Thr Ala Arg His Ala Ser Pro Pro
35     40     45
Ala Ala Thr Gly Glu His Leu Ala Ala Arg Leu Ala Ile Gln Ala Ala
50     55     60
Ile Arg Gly Asp Leu Pro Ala Ala Thr Gly Gln Leu Cys Gly Val Gly
65     70     75     80
Pro Ala Pro Cys Phe Gly Lys Ser Ser Pro Cys Pro Ser Arg Arg Asp
85     90     95
Asp Arg Ser Arg Pro Gly Asp Arg Gly Tyr Ala Leu Lys Val Arg Gln
100    105    110
Thr Tyr Leu Leu Pro Ile Gly Ala Ala Pro Glu Ser Gln Ser Ala Gln
115    120    125
Ala Glu Ala Trp Ser Ala Ala Ala Tyr Gly Ala Leu Ala His Asp
130    135    140
Ile Gly Lys Ile Val Val Asp Leu Gln Val Glu Leu Gln Asp Gly Ser
145    150    155    160
Thr Trp His Pro Trp Asn Gly Pro Ile Asn Gln Pro Tyr Arg Phe Lys
165    170    175
Tyr Val Lys Ser Arg Glu Tyr Gln Leu His Gly Ala Ala Ser Ala Leu
180    185    190
Phe Ile His Gln Leu Leu Pro Arg Thr Ala Leu Asp Trp Leu Ser Arg
195    200    205
Phe Pro Glu Leu Trp Ala Gln Leu Ile Tyr Leu Phe Ala Gly Gln Tyr
210    215    220
Glu His Ala Gly Ile Leu Gly Glu Ile Ile Val Lys Ala Asp Gln Ala
225    230    235    240
Ser Val Ala Gln Glu Leu Gly Gly Asn Pro Asp Arg Ala Leu Ala Ala
245    250    255
Pro Lys Gln Ser Leu Gln Arg Gln Leu Ala Asp Gly Leu Arg Phe Leu
260    265    270
Val Lys Asp Lys Phe Lys Leu Asn Gln Pro Ser Gly Pro Ser Asp Gly
275    280    285
Trp Leu Thr Gln Asp Ala Leu Trp Leu Val Ser Lys Pro Ala Ala Asp
290    295    300
Gln Leu Arg Ala Tyr Leu Leu Ala Gln Gly Ile Asp Gly Val Pro Ser
305    310    315    320
Ser Asn Ala Pro Phe Phe Ser Met Leu Gln Asp Gln Ala Val Ile Gln
325    330    335

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Thr	Asn	Ala	Glu	Asp	Lys	Ala	Ile	Trp	Thr	Ala	Thr	Val	Asp	Asn	Gly
			340					345					350		
Ala	Gly	Trp	Arg	Asn	Lys	Phe	Thr	Leu	Leu	Lys	Ile	Ala	Pro	Ala	Leu
		355					360					365			
Ile	Trp	Thr	Asp	Ala	Ala	Glu	Arg	Pro	Ser	Pro	Tyr	Ser	Gly	Ser	Leu
		370				375					380				
Val	Val	Glu	Asp	Gly	Thr	Ala	Ser	Thr	Glu	Lys	Pro	Glu	Thr	Thr	Cys
385					390					395					400
Glu	Ile	Pro	Asn	Gly	Pro	Ala	Glu	Gln	Gln	Gln	Ala	Pro	Glu	Thr	Lys
				405						410					415
Met	Met	Leu	His	Gln	Pro	Ala	Pro	Ser	Val	Ala	Lys	Pro	Ala	Asn	Glu
			420					425					430		
Thr	Gln	Ala	Ile	Ala	Lys	Pro	Ser	Thr	Asp	Asp	Gln	Glu	Glu	Thr	Asp
		435					440					445			
Asp	Leu	Tyr	Ala	Leu	Leu	Gly	Asn	Ile	Asn	Ser	Pro	Leu	Glu	Glu	Leu
		450				455					460				
Asp	Thr	Ser	His	Asp	Ser	Pro	Ala	Ala	Ser	Pro	Thr	Asn	Thr	Arg	Gly
465					470					475					480
Glu	Glu	Asn	Leu	Gln	Pro	Leu	Gly	Thr	Lys	Glu	Pro	Thr	Asp	Cys	
				485				490						495	
Ala	Pro	Glu	Ala	Ile	Glu	Asp	Val	Phe	Met	Pro	Ser	Arg	Ser	Thr	Asp
			500					505					510		
Leu	Gly	Gln	Gly	Phe	Val	Gly	Trp	Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg
		515					520					525			
Arg	Leu	Phe	Ile	Asn	Asp	Thr	Lys	Ala	Leu	Val	His	Thr	Val	Asp	Gly
		530				535					540				
Thr	Ala	Met	Leu	Val	Thr	Pro	Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu
545					550					555					560
His	Pro	Val	Leu	Glu	Lys	Leu	Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp
				565				570						575	
Lys	Leu	Val	Gln	Arg	Ala	Phe	Glu	Lys	Gln	Gly	Leu	His	Arg	Lys	Thr
			580					585					590		
Ser	Lys	Asn	Leu	Asn	Ile	Trp	Thr	Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys
		595					600					605			
Thr	Lys	Glu	Leu	Lys	Ala	Tyr	Leu	Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe
		610				615					620				
Pro	Glu	Gln	Pro	Leu	Asp	Asn	Pro	Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala
625					630					635					640
Glu															

<210> 104  
 <211> 4590  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 104  
 gaattccatg ggcgcgtgga ggaggcttcc gagtcgccgg tggcaggcgt acggggccggc 60  
 aactaccagg tcgacctgga cgatgcgagc tttgcccggc aggtagaacg cctgcaggcc 120  
 cacgtgaggg ccggcgacgt gttccagatc gtaccttcgc gcagcttcag catgccgtgc 180  
 gcggaccctt ggcgggccta tcgccagttg tgcctgcgca accccagccc gtaccgcttc 240  
 ttccctcgatg cgggggactt ctgcctgttc ggcgcttcgc cggagtcggc attgaagtac 300  
 gacgcggaga gtcgcgaggt ggaactctat cccattgccg gcacccgccc gcgcggatgc 360  
 gatgcccggg gcgccatcga tgcggaactg gacaatcgcc tggaagcgga gttgcgcctg 420  
 gatgccaagg agatcgccga gcacatgatg ctggtcgacc tggcgcgcaa cgatctggcg 480  
 cgcgtctgcc gcagcgggtac ccggcaggtg cgcgacatgc tcaaggctcga tcgctacagc 540  
 cacgtgatgc acctggtctc gcgcgtggct ggcgaaactgc acggcgaaact ggatgcgctg 600  
 catgcctacc gtgcctgcct gaacatgggc accctggctc gcgcgcccga ggtccgtgcc 660

atgcagttgc	tgcggcagta	cgaggatggc	tatcgcgcca	gctacggtgg	tgcgatcggc	720
attctcgaca	gcgccggcaa	cctcgatacc	agcattgtca	tccgctccgc	cgaggtccgc	780
gaaggtatcg	cgcggttcg	ggcaggcgcc	ggcgtggtgc	tggattcgga	tccacggctg	840
gagggccagg	aaacccgcaa	caaggcgctg	gcggtgctga	ccgccgtggc	cgctgcgaa	900
cgcgaaagg	gagagcgcg	tgcgcatcac	gctgttgat	aacttcgatt	ccttcaccta	960
caacctggtc	gagcagttct	gcctgctcgg	cgcgagggtc	cggtgatgc	gcaacgatac	1020
gccgttgccg	acgatccagg	cggcattgct	ggccgacggt	tgcgaactgc	tgggtgctgtc	1080
gccggggccc	ggtcggccgg	aagacgccgg	ctgtatgctg	gaattgctcg	cctgggcccg	1140
cgggcgcttg	ccggtgctcg	gcgtctgcct	cggccaccag	gcgctggcgc	tggccgcccg	1200
tggcgcggtg	ggcgaggcga	ggaagccgct	gcatggcaag	agcacgtccc	tgcgtttcga	1260
tcagcgtcac	ccgctgttcg	acggcatcgc	tgacctgcgc	gtcgcgcgct	accactcgct	1320
ggtggtcagt	cgctgcgcgg	aaggtttcga	ctgcctggcc	gatgccgatg	gcgagatcat	1380
ggcgatggcc	gatccgcgca	atcgacagct	gggcttgcaa	ttccatcccg	agtcgattct	1440
caccacccac	ggccagcgtc	tgctggagaa	cgctctactc	tgggtcggcg	cgttggcggt	1500
cgcggagcgc	cttcgggcct	gagcggcgct	gcgcagtttc	gaccgaggct	cggttgccag	1560
gccggcgcac	cgtcgaaacg	ctggcgggcc	agttcgcgca	ggcgctggcg	ggcgctttcg	1620
agaaagcgac	ggaagctgcy	ctcggattcc	agcgcggtgt	tgtagtagca	atacaccttg	1680
gtgtcgatgc	cgcccggttc	gtacagttcg	ctgaggactg	ccagggtacc	gttgcgcagg	1740
cgttcctcga	cgaataaatg	cggcgagatg	ccccatccga	cgccggcttc	caccagacgc	1800
agcatgtcgt	cgaagttttc	cacgaagagc	accttgtcgc	tgaccggccg	cagcaggttc	1860
gaatgctgcc	cggagcggtc	gccagggtg	atctgccggt	aattggccag	gctcgcgatg	1920
ctgtgcaggg	aggcattgca	caacgggtgc	tgcggatggg	cgacgacgaa	cgcttggtg	1980
tagccgagca	cgcactggtt	gaagcgggag	atcttcagtt	cctcgtcgat	ggtgatggcg	2040
atatcgattt	ccgcgttgct	ctgcttgatc	gtcgccaggc	tatcggcggg	cgaggtgcgt	2100
atcaggctga	ccatgttgaa	atcgtcgagc	agtacgctgc	tcaccgtatc	gcagaacgac	2160
ggcgggatgg	cggtgtccag	cagcaccggg	agattgcgcg	gacccttggt	gagattgaag	2220
gcgatgtcgc	cgatcagctg	ctggtagttc	agcaggctgc	gcagtgaagg	gatcaggcga	2280
agcgcctgct	cggtgggttc	gaccttgtag	ccgtcccac	ggaccagctc	cacgcacagg	2340
tcgatttcca	ggttgctgac	cgccgagctg	accgcggtgt	gcgacttgcy	caggatccgc	2400
gcagcggagg	aaatcgaacc	ggaggcgatg	acctggagga	acatgttcac	gtgattcagg	2460
ttatgaatag	gcatccctta	ttccttttat	tgggtggcgc	gtgccgcttc	ccttgatcgg	2520
gtcaggttgc	cgctactgtg	gaagaagcgt	cgaggactcg	atagatagcg	cccagtggtt	2580
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 <211> 1284  
 <212> DNA  
 <213> Pseudomonas aeruginosa

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<210> 106  
 <211> 1035  
 <212> DNA  
 <213> Pseudomonas aeruginosa

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1020  
1035

<210> 107  
<211> 427  
<212> PRT  
<213> *Pseudomonas aeruginosa*

<400> 107  
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20 25 30  
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35 40 45  
Ser Trp Arg Trp Pro Ile Arg Ala Ile Asp Ser Trp Ala Cys Asn Ser  
50 55 60  
Ile Pro Ser Arg Phe Ser Pro Pro Thr Ala Ser Val Cys Trp Arg Thr  
65 70 75 80  
Leu Tyr Ser Gly Ala Ala Arg Trp Arg Ser Arg Ser Ala Phe Gly Pro  
85 90 95  
Glu Arg Arg Cys Ala Val Ser Thr Glu Ala Arg Leu Pro Gly Arg Arg  
100 105 110  
Ile Val Glu Thr Leu Ala Ala Gln Phe Ala Gln Ala Leu Ala Gly Ala  
115 120 125  
Phe Glu Lys Ala Thr Glu Ala Ala Leu Gly Phe Gln Arg Gly Val Val  
130 135 140  
Val Ala Ile His Leu Gly Val Asp Ala Ala Arg Phe Val Gln Phe Ala  
145 150 155 160  
Glu Asp Cys Gln Gly Thr Val Ala Gln Ala Phe Leu Asp Glu Ile Met  
165 170 175  
Arg Arg Asp Ala Pro Ser Asp Ala Gly Phe His Gln Thr Gln His Val  
180 185 190  
Val Glu Val Phe His Glu Glu Tyr Leu Val Ala Asp Arg Pro Gln Gln  
195 200 205  
Val Arg Met Leu Pro Gly Ala Ala Thr Glu Ala Asp Leu Pro Val Ile  
210 215 220  
Gly Gln Ala Arg Asp Ala Val Gln Gly Gly Ile Ala Gln Arg Val Leu  
225 230 235 240  
Arg Met Gly Asp Asp Glu Arg Leu Gly Val Ala Glu His Ala Leu Val  
245 250 255  
Glu Ala Gly Asp Leu Gln Phe Leu Val Asp Gly Asp Gly Asp Ile Asp  
260 265 270  
Phe Arg Val Val Leu Leu Asp Arg Gln Ala Ile Gly Gly Arg Gly  
275 280 285  
Ala Tyr Gln Ala Asp His Val Glu Ile Val Glu Gln Tyr Ala Ala His  
290 295 300  
Arg Ile Ala Glu Arg Arg Arg Asp Gly Gly Val Gln Gln His Pro Glu  
305 310 315 320  
Ile Ala Arg Thr Leu Val Glu Ile Glu Gly Asp Val Ala Asp Gln Leu  
325 330 335  
Leu Val Val Gln Gln Ala Ala His Val Arg Asp Gln Ala Lys Arg Leu  
340 345 350  
Leu Gly Gly Phe Asp Leu Val Ala Val Pro Thr Asp Gln Leu His Ala  
355 360 365  
Gln Val Asp Phe Gln Val Ala Asp Arg Arg Ala Asp Arg Gly Val Arg  
370 375 380  
Leu Ala Gln Asp Pro Arg Ser Gly Gly Asn Arg Thr Gly Gly Asp Asp  
385 390 395 400

Leu Glu Glu His Val His Val Ile Gln Val Met Asn Arg His Pro Leu  
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<210> 108  
<211> 344  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 108  
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Thr Ala Val Ser Ser Ala Val Ser Asn Leu Glu Ile Asp Leu Cys Val  
35 40 45  
Glu Leu Val Arg Arg Asp Gly Tyr Lys Val Glu Pro Thr Glu Gln Ala  
50 55 60  
Leu Arg Leu Ile Pro Tyr Met Arg Ser Leu Leu Asn Tyr Gln Gln Leu  
65 70 75 80  
Ile Gly Asp Ile Ala Phe Asn Leu Asn Lys Gly Pro Arg Asn Leu Arg  
85 90 95  
Val Leu Leu Asp Thr Ala Ile Pro Pro Ser Phe Cys Asp Thr Val Ser  
100 105 110  
Ser Val Leu Leu Asp Asp Phe Asn Met Val Ser Leu Ile Arg Thr Ser  
115 120 125  
Pro Ala Asp Ser Leu Ala Thr Ile Lys Gln Asp Asn Ala Glu Ile Asp  
130 135 140  
Ile Ala Ile Thr Ile Asp Glu Glu Leu Lys Ile Ser Arg Phe Asn Gln  
145 150 155 160  
Cys Val Leu Gly Tyr Thr Lys Ala Phe Val Val Ala His Pro Gln His  
165 170 175  
Pro Leu Cys Asn Ala Ser Leu His Ser Ile Ala Ser Leu Ala Asn Tyr  
180 185 190  
Arg Gln Ile Ser Leu Gly Ser Arg Ser Gly Gln His Ser Asn Leu Leu  
195 200 205  
Arg Pro Val Ser Asp Lys Val Leu Phe Val Glu Asn Phe Asp Asp Met  
210 215 220  
Leu Arg Leu Val Glu Ala Gly Val Gly Trp Gly Ile Ala Pro His Tyr  
225 230 235 240  
Phe Val Glu Glu Arg Leu Arg Asn Gly Thr Leu Ala Val Leu Ser Glu  
245 250 255  
Leu Tyr Glu Pro Gly Gly Ile Asp Thr Lys Val Tyr Cys Tyr Tyr Asn  
260 265 270  
Thr Ala Leu Glu Ser Glu Arg Ser Phe Arg Arg Phe Leu Glu Ser Ala  
275 280 285  
Arg Gln Arg Leu Arg Glu Leu Gly Arg Gln Arg Phe Asp Asp Ala Pro  
290 295 300  
Ala Trp Gln Pro Ser Leu Gly Arg Asn Cys Ala Ala Pro Leu Arg Pro  
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325 330 335  
Pro Ala Asp Ala Gly Arg Gly Trp  
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<210> 109

<211> 128  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 109  
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 ggctggtc 128

<210> 110  
 <211> 42  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 110  
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 20 25 30  
 Arg Phe Val Leu Ala Ala Phe Leu Gly Trp  
 35 40

<210> 111  
 <211> 6909  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 111  
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<211> 1266

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 115

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 <211> 437  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 116

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His	Gly	Met	Ala	Gly	Glx	Arg	Leu	Arg	Arg	Leu	Leu	Glu	Arg	Ser	Phe
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Pro	Lys	Asn	Arg	Thr	Glu	Ser	Met	Pro	His	Thr	Cys	Asn	Phe	Glx	Gly
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Val	Met	Ala	Ile	Ala	Lys	Lys	Arg	Leu	Glx	Val	Cys	Pro	Leu	Ser	Asn
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Leu	Val	Thr	Thr	Gly	Phe	Gln	Ala	Lys	His	Ser	Val	Met	Ala	Ile	Arg
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His	Glx	Leu	Lys	Leu	Trp	Arg	Ser	Glu	Ala	Gly	Asn	Phe	Cys	Pro	
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Glu	Lys	Val	Ser	Arg	Gln	Phe	Phe	Arg	Pro	Val	Ile	Pro	Met	Ser	Ser
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Phe	Gln	Tyr	Gly	Cys	Gln	Ser	Ile	Arg	Thr	Gly	Gly	Asp	Ser	His	His
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Arg	Arg	Asn	Arg	Ala	Thr	Val	Glu	His	Tyr	Met	Arg	Met	Lys	Gly	Ala
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Ser	Leu	Arg	Arg	Leu	Ala	Glu	Trp	Leu	Glu	Arg	Cys	Phe	Pro	Asp	Trp
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Glu	Trp	His	Asn	Val	Arg	Ile	Phe	Glu	Thr	Glu	Asp	Pro	Asn	His	Leu
			260					265					270		
Trp	Val	Glu	Cys	Asp	Gly	Arg	Gly	Lys	Ala	Leu	Val	Pro	Gly	Tyr	Pro
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Gly	Arg	Ile	Lys	Arg	Asn	Arg	Glu	Phe	Thr	Asn	Pro	Met	Gln	Lys	Leu
305					310					315					320
Arg	Ala	Leu	Gly	Ile	Ala	Val	Pro	Gln	Ile	Lys	Arg	Asp	Gly	Ile	Pro
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Thr	Glx	Leu	Met	Ile	Ile	Pro	Ile	Gln	Glu	Glu	Ile	Glx	Arg	Cys	Ser
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Trp Pro Ser Thr Arg Cys Gly Arg Glx Asn Ala Phe Pro Asp Trp Glu		415
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Trp Tyr Asn Ile Lys		430
435		

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 <211> 88  
 <212> PRT  
 <213> Pseudomonas aeruginosa

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35 40 45
Gly Leu Trp Thr Thr Asp Thr Gly Ser Pro Ile Val Ile Arg Gly Lys
50 55 60
Asp Lys Leu Ala Glu His Ala Val Trp Ser Leu Lys Cys Leu Pro Gly
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Leu Gly Val Val Gln His Gln Gly
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 <211> 216  
 <212> DNA  
 <213> Pseudomonas aeruginosa

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gagctgctgc ggcgccaccc gttgctccag caggggctcg cctggcttgg cgtcggctgg	180
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<210> 119  
 <211> 103  
 <212> DNA  
 <213> Pseudomonas aeruginosa

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<210> 120  
 <211> 147  
 <212> DNA  
 <213> Pseudomonas aeruginosa

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tgatcgctg gatgaacagg tcgacaa 147

<210> 121  
<211> 140  
<212> DNA  
<213> Pseudomonas aeruginosa

<220>  
<221> variation  
<222> (1)...(140)  
<223> N is any nucleic acid.

<400> 121  
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ctacgcgtgg acaacgtggc 140

<210> 122  
<211> 304  
<212> DNA  
<213> Pseudomonas aeruginosa

<220>  
<221> variation  
<222> (1)...(304)  
<223> N is any nucleic acid.

<400> 122  
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cctt 304

<210> 123  
<211> 45  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 123  
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<210> 124  
<211> 406  
<212> DNA  
<213> Pseudomonas aeruginosa

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<210> 125  
<211> 200

<212> DNA  
 <213> *Pseudomonas aeruginosa*

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<210> 126  
 <211> 117  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 126  
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<210> 127  
 <211> 325  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 127  
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<210> 128  
 <211> 360  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<220>  
 <221> variation  
 <222> (1)...(360)  
 <223> N is any nucleic acid.

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<210> 129  
 <211> 3065  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 129  
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gccccatccg	acgcccggct	ccaccagacg	cagcatgtcg	tcgaaagttt	ccacgaagag	2880
caccttgctg	ctgaccggcc	gcagcaggtt	cgaatgctgc	ccggagcggc	tgccgaggct	2940
gatctgccgg	taattggcca	ggctcgcgat	gctgtgcagg	gaggcattgc	acaacgggtg	3000
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<210> 130

<211> 530

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 130

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Glu	Ser	Leu	Glu	Tyr	Arg	Thr	Leu	Val	Pro	Glu	Ala	Leu	Ser	Ile	Trp



Leu Glu Ala Glu Glu Thr Arg Asn Lys Ala Leu Ala Val Leu Thr Ala  
                   500                  505                  510  
 Val Ala Ala Ala Glu Arg Glu Arg Gly Glu Arg Asp Ala His His Ala  
                   515                  520                  525  
 Val Gly  
           530

<210> 131  
 <211> 1436  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 131  
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 cggcccgggc agaactgccg gacttcacgc ctttggtcga acaggcgctc cggcggtgg 180  
 tgaatatcag tacgcggcag aagctgccgg atcgcgccat ggcgcgcggg cagctgtcga 240  
 tccccgacct cgaagggtcg ccgccgatgt tccgcgactt ctcgagcgc acgatcccgc 300  
 aggttccgcg caatccgcgc ggccagcagc gcgaggcgca atcgctgggc tccggcttca 360  
 tcatctccaa cgacggctac atcctcacca acaatcacgt cgtggccgat gccgacgaga 420  
 tcttggtgcg cctgtccgac cgtagcgagc acaaggccaa gctggtcggc gcggacccgc 480  
 gcagcgacgt ggcggtgctg aagatcgagg cgaagaacct gccgaccctg aaactgggcg 540  
 attcgaacaa gctgaaagtg ggcgaatggg tcttgcccat cggttcgccg ttcggcttcg 600  
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 gccagtcgat caacgagtc gccgacctgc cgcacctggt gggcaacatg aagccgggcg 1080  
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 tgcgtccggg cgatgtcatc acccacctgg acaacaaggc ggtgacctcg accaagatct 1380  
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<210> 132  
 <211> 460  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 132  
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                   20                  25                  30  
 Leu Val Glu Gln Ala Ser Pro Ala Val Val Asn Ile Ser Thr Arg Gln  
                   35                  40                  45  
 Lys Leu Pro Asp Arg Ala Met Ala Arg Gly Gln Leu Ser Ile Pro Asp  
   50                  55                  60  
 Leu Glu Gly Leu Pro Pro Met Phe Arg Asp Phe Leu Glu Arg Thr Ile  
   65                  70                  75                  80  
 Pro Gln Val Pro Arg Asn Pro Arg Gly Gln Gln Arg Glu Ala Gln Ser  
                   85                  90                  95  
 Leu Gly Ser Gly Phe Ile Ile Ser Asn Asp Gly Tyr Ile Leu Thr Asn  
                   100                  105                  110

Asn	His	Val	Val	Ala	Asp	Ala	Asp	Glu	Ile	Leu	Val	Arg	Leu	Ser	Asp
	115						120					125			
Arg	Ser	Glu	His	Lys	Ala	Lys	Leu	Val	Gly	Ala	Asp	Pro	Arg	Ser	Asp
	130					135					140				
Val	Ala	Val	Leu	Lys	Ile	Glu	Ala	Lys	Asn	Leu	Pro	Thr	Leu	Lys	Leu
145					150					155					160
Gly	Asp	Ser	Asn	Lys	Leu	Lys	Val	Gly	Glu	Trp	Val	Leu	Ala	Ile	Gly
			165						170					175	
Ser	Pro	Phe	Gly	Phe	Asp	His	Ser	Val	Thr	Ala	Gly	Ile	Val	Ser	Ala
			180					185					190		
Lys	Gly	Arg	Ser	Leu	Pro	Asn	Glu	Ser	Tyr	Val	Pro	Phe	Ile	Gln	Thr
	195					200					205				
Asp	Val	Ala	Ile	Asn	Pro	Gly	Asn	Ser	Gly	Gly	Pro	Leu	Leu	Asn	Leu
	210					215					220				
Glu	Gly	Glu	Val	Val	Gly	Ile	Asn	Ser	Gln	Ile	Phe	Thr	Arg	Ser	Gly
225					230					235					240
Gly	Phe	Met	Gly	Leu	Ser	Phe	Ala	Ile	Pro	Ile	Asp	Val	Ala	Leu	Asn
			245						250					255	
Val	Ala	Asp	Gln	Leu	Lys	Lys	Ala	Gly	Lys	Val	Ser	Arg	Gly	Trp	Leu
			260					265					270		
Gly	Val	Val	Ile	Gln	Glu	Val	Asn	Lys	Asp	Leu	Ala	Glu	Ser	Phe	Gly
	275						280					285			
Leu	Asp	Lys	Pro	Ser	Gly	Ala	Leu	Val	Ala	Gln	Leu	Val	Glu	Asp	Gly
	290					295					300				
Pro	Ala	Ala	Lys	Gly	Gly	Leu	Gln	Val	Gly	Asp	Val	Ile	Leu	Ser	Leu
305				310						315					320
Asn	Gly	Gln	Ser	Ile	Asn	Glu	Ser	Ala	Asp	Leu	Pro	His	Leu	Val	Gly
			325						330				335		
Asn	Met	Lys	Pro	Gly	Asp	Lys	Ile	Asn	Leu	Asp	Val	Ile	Arg	Asn	Gly
			340					345					350		
Gln	Arg	Lys	Ser	Leu	Ser	Met	Ala	Val	Gly	Asn	Leu	Pro	Asp	Asp	Asp
	355						360					365			
Glu	Glu	Ile	Ala	Ser	Met	Gly	Ala	Pro	Gly	Ala	Glu	Arg	Ser	Ser	Asn
	370					375					380				
Arg	Leu	Gly	Val	Thr	Val	Ala	Asp	Leu	Thr	Ala	Glu	Gln	Arg	Lys	Ser
385					390					395					400
Leu	Asp	Ile	Gln	Gly	Gly	Val	Val	Ile	Lys	Glu	Val	Gln	Asp	Gly	Pro
			405						410					415	
Ala	Ala	Val	Ile	Gly	Leu	Arg	Pro	Gly	Asp	Val	Ile	Thr	His	Leu	Asp
			420					425					430		
Asn	Lys	Ala	Val	Thr	Ser	Thr	Lys	Ile	Phe	Ala	Asp	Val	Ala	Lys	Ala
	435						440					445			
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<210> 133  
 <211> 1341  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 133	
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tccagcacca agatcgacct gatcaaccag ggcaagtcgc ccacgctcga accgggcctg	180
gaagcgttgt tgcagcaagg ccggcagacc ggacggctgt cgggcaccac cgacttcaag	240
aaggctgtgc tggactccga cgtatcgttc atctgcgtcg gcacgccgag caagaagaac	300
ggcgacctgg acctgggcta catcgagacc gtctgccgcg agatcggctt cgccatccgc	360
gagaagtccg aacgccacac cgtggtggtg cgcagcaccg tactgccggg caccgtcaac	420

aacgtggtga	tcccgctgat	cgaggactgc	tcgggcaaga	aggccggggt	cgacttcggc	480
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ccgatgaccg	tgatcggcga	actggacaag	cagaccggcg	accttctcga	ggaaatctac	600
cgcgagctgg	acgcgcgat	catccgcaag	accgtcgagg	tcgccgagat	gatcaagtac	660
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aaggcggtcg	gcgtcgacgg	ccgcgaggtg	atggacgtga	tctgccagga	ccacaagctc	780
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gatgtacgcg	ccctcaccta	tcgcgccagc	cagctggacg	tcgagcaccc	gatgctcggt	900
tcgttgatgc	gcagcaactc	caaccagggtg	cagaaggcct	tcgatctcat	caccagccac	960
gacacccgca	aggtcggcct	gctcggcctg	tcgttcaagg	ccggcaccga	cgatttgccg	1020
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ttcgaccgca	acgtcgaata	cgcgcgtgtc	cacggggcca	acaaggaata	catcgagtcg	1140
aagatcccgc	acgtctcctc	gctgctgggtc	tcggacctcg	acgaagtggg	ggcgagttcc	1200
gatgtgctgg	tgctgggcaa	tggcgacgag	ctgttcgtcg	acctggtgaa	caagacccc	1260
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<210> 134  
 <211> 436  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 134

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			20					25					30		
Ser	Thr	Lys	Ile	Asp	Leu	Ile	Asn	Gln	Gly	Lys	Ser	Pro	Ile	Val	Glu
		35					40					45			
Pro	Gly	Leu	Glu	Ala	Leu	Leu	Gln	Gln	Gly	Arg	Gln	Thr	Gly	Arg	Leu
	50					55					60				
Ser	Gly	Thr	Thr	Asp	Phe	Lys	Lys	Ala	Val	Leu	Asp	Ser	Asp	Val	Ser
65					70					75				80	
Phe	Ile	Cys	Val	Gly	Thr	Pro	Ser	Lys	Lys	Asn	Gly	Asp	Leu	Asp	Leu
			85						90					95	
Gly	Tyr	Ile	Glu	Thr	Val	Cys	Arg	Glu	Ile	Gly	Phe	Ala	Ile	Arg	Glu
			100					105					110		
Lys	Ser	Glu	Arg	His	Thr	Val	Val	Val	Arg	Ser	Thr	Val	Leu	Pro	Gly
		115					120					125			
Thr	Val	Asn	Asn	Val	Val	Ile	Pro	Leu	Ile	Glu	Asp	Cys	Ser	Gly	Lys
	130					135					140				
Lys	Ala	Gly	Val	Asp	Phe	Gly	Val	Gly	Thr	Asn	Pro	Glu	Phe	Leu	Arg
145					150					155				160	
Glu	Ser	Thr	Ala	Ile	Lys	Asp	Tyr	Asp	Phe	Pro	Pro	Met	Thr	Val	Ile
			165						170					175	
Gly	Glu	Leu	Asp	Lys	Gln	Thr	Gly	Asp	Leu	Leu	Glu	Glu	Ile	Tyr	Arg
			180					185					190		
Glu	Leu	Asp	Ala	Pro	Ile	Ile	Arg	Lys	Thr	Val	Glu	Val	Ala	Glu	Met
		195					200					205			
Ile	Lys	Tyr	Thr	Cys	Asn	Val	Trp	His	Ala	Ala	Lys	Val	Thr	Phe	Ala
	210				215						220				
Asn	Glu	Ile	Gly	Asn	Ile	Ala	Lys	Ala	Val	Gly	Val	Asp	Gly	Arg	Glu
225					230					235				240	
Val	Met	Asp	Val	Ile	Cys	Gln	Asp	His	Lys	Leu	Asn	Leu	Ser	Arg	Tyr
			245						250					255	
Tyr	Met	Arg	Pro	Gly	Phe	Ala	Phe	Gly	Gly	Ser	Cys	Leu	Pro	Lys	Asp
		260						265					270		
Val	Arg	Ala	Leu	Thr	Tyr	Arg	Ala	Ser	Gln	Leu	Asp	Val	Glu	His	Pro
		275					280						285		

Met	Leu	Gly	Ser	Leu	Met	Arg	Ser	Asn	Ser	Asn	Gln	Val	Gln	Lys	Ala
290						295					300				
Phe	Asp	Leu	Ile	Thr	Ser	His	Asp	Thr	Arg	Lys	Val	Gly	Leu	Leu	Gly
305					310					315					320
Leu	Ser	Phe	Lys	Ala	Gly	Thr	Asp	Asp	Leu	Arg	Glu	Ser	Pro	Leu	Val
				325					330					335	
Glu	Leu	Ala	Glu	Met	Leu	Ile	Gly	Lys	Gly	Tyr	Glu	Phe	Arg	Ile	Phe
				340				345					350		
Asp	Arg	Asn	Val	Glu	Tyr	Ala	Arg	Val	His	Gly	Ala	Asn	Lys	Glu	Tyr
		355					360					365			
Ile	Glu	Ser	Lys	Ile	Pro	His	Val	Ser	Ser	Leu	Leu	Val	Ser	Asp	Leu
370						375					380				
Asp	Glu	Val	Val	Ala	Ser	Ser	Asp	Val	Leu	Val	Leu	Gly	Asn	Gly	Asp
385					390					395					400
Glu	Leu	Phe	Val	Asp	Leu	Val	Asn	Lys	Thr	Pro	Ser	Gly	Lys	Lys	Leu
				405					410					415	
Val	Asp	Leu	Val	Gly	Phe	Met	Pro	His	Thr	Thr	Thr	Ala	Gln	Ala	Glu
			420					425					430		
Gly	Ile	Cys	Trp												
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<210> 135  
 <211> 1723  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 135

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cctctcccc	gtgcgcacct	gcggctgagc	ctcagaacga	agtccggcgg	taggcacggt	180
agcgcgggaa	ccagaagtgc	gcctcgatgg	cgctcgtcag	tacctcgtcg	ctggtatgca	240
gggccttgcc	ctcggcctgg	gcctgcttgg	ccacggcgac	ggcgatgcgc	ttgctgacct	300
cgcggatgtc	gcccagcgcc	ggcaacacgg	cgccctcgcc	ctgggtaacg	atcggcgagc	360
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gaatccgctt	gtcgccccacc	tgcaccgggt	ggaacgggct	accggtggcg	accagcgctt	540
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acagcggcat	caccagcggc	tgcttgcaat	ggctgtgcag	ctcacggatg	acctcttcgg	660
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aaagaaaaaa	atgggggaaa	agttgaaaag	tatatgataa	gagcaggtgt	caaaatgaat	1620
gttttgaaaag	cccagtgaaa	taaactctgg	aaaaggcagt	tataagggtc	ataaaaggga	1680
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<210> 136

<211> 2048  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 136  
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 tcaacgacaa ctacatctgg ctgttgcaag atgcgacaag ccgtcgctgc gcggtggtcg 1560  
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 gcgatatcct ggtgaccac caccatcacg accacgtcgg cggcgctcgc gccctgaagg 1680  
 aactgaccgg cgcgcgggtt ctccggccgg ccaacgagaa gatccccggc cgcgacctgg 1740  
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 gcggcgacac cctgttcgcc gccggctcgc gccgtctctt cgaaggcacc ccggcgacga 1920  
 tgcaccattc cctggcgcca ctggccgcgc tgccggccaa caccggggtc tactgcaccc 1980  
 acgagtacac gctgagcaac ctgcgcttcg cgctggcggg ggagccccgac aacgcggcgc 2040  
 tgcgggaa 2048

<210> 137  
 <211> 144  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<220>  
 <221> variation  
 <222> (1)...(144)  
 <223> N is any nucleic acid.

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 ctgnccacn gtactagtgc acgc 144

<210> 138  
 <211> 18  
 <212> DNA

<213> Pseudomonas aeruginosa  
 <400> 138  
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 <210> 139  
 <211> 20  
 <212> DNA  
 <213> Pseudomonas aeruginosa  
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 <212> DNA  
 <213> Pseudomonas aeruginosa  
 <400> 141  
 cgttaccatg ttaggaggtc 20  
 <210> 142  
 <211> 24  
 <212> DNA  
 <213> Pseudomonas aeruginosa  
 <400> 142  
 cgcacgctcg aaacgctggc ggcc 24  
 <210> 143  
 <211> 24  
 <212> DNA  
 <213> Pseudomonas aeruginosa  
 <400> 143  
 gccgatggcg agatcatggc gatg 24  
 <210> 144  
 <211> 29  
 <212> DNA  
 <213> Pseudomonas aeruginosa  
 <400> 144  
 tgcgcaacga tacgccgttg ccgacgatc 29  
 <210> 145  
 <211> 24  
 <212> DNA  
 <213> Pseudomonas aeruginosa  
 <400> 145

gattccacct tcgcagcgca gccc 24

<210> 146  
<211> 24  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 146  
gattccacct tcgcagcgca gccc 24

<210> 147  
<211> 24  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 147  
gccgatggcg agatcatggc gatg 24

<210> 148  
<211> 1008  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 148  
ggccaggcaa acgcatggc caccgtgcaa cagctcgacc cgatctacgt cgacgtcacc 60  
cagccgtcca ccgccctgtt gcgcatgcgc cgcgaactgg ccagcggcca gttggagcgc 120  
gccggcgaca acgctgcgaa ggtctccctg aagctggagg acggtagcca ataccgctg 180  
gaaggccgcc tcgaattctc cgaggtttcc gtcgacgaag gcaccggctc ggtcaccatc 240  
cgcccggtgt tccccaaccc gaacaacgag ctgctgcccg gcatgttcgt tcacgcgcag 300  
ttgcaggaag gcgtcaagca gaaggccatc ctgctccgc agcaaggcgt gaccgcgcac 360  
ctcaagggcc aggtaccgc gctggtggtg aacgcgcaga acaaggtcga gctgcgggtg 420  
atcaaggccg accgggtgat cggcgacaag tggctggtca ccgaaggcct gaacgccggc 480  
gacaagatca ttaccgaagg cctgcagttc gtgcagccgg gtgtcgaggt gaagaccgtg 540  
ccggcgaaaga atgtcgcgtc cgcgcagaag gccgacccg ctccggcgaa aaccgacagc 600  
aagggtgat caaggggatt cgtaatgtcg aagtttttca ttgataggcc catttttcgcg 660  
tgggtgatcg ccttggtgat catgctcgcg ggccggcctgt cgatcctcaa tctgccggtc 720  
aaccagtacc cggccatcgc cccgccggcc atcgccgtgc aggtgagcta cccgggcgcc 780  
tcggccgaga cgggtgcagga caccgtggtc caggtgatcg agcagcagat gaacgggatc 840  
gacaatctgc gctacatctc ctccggagagt aactccgacg gcagcatgac catcaccgtg 900  
accttcgaac agggcaccga ccccgacatc gccaggtcc aggtgcagaa caagctgcaa 960  
ctggccaccc cgctgctgcc gcaggaagtg cagcgccagg ggatccgg 1008

<210> 149  
<211> 202  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 149  
Gly Gln Ala Asn Ala Met Ala Thr Val Gln Gln Leu Asp Pro Ile Tyr  
1 5 10 15  
Val Asp Val Thr Gln Pro Ser Thr Ala Leu Leu Arg Met Arg Arg Glu  
20 25 30  
Leu Ala Ser Gly Gln Leu Glu Arg Ala Gly Asp Asn Ala Ala Lys Val  
35 40 45  
Ser Leu Lys Leu Glu Asp Gly Ser Gln Tyr Pro Leu Glu Gly Arg Leu  
50 55 60  
Glu Phe Ser Glu Val Ser Val Asp Glu Gly Thr Gly Ser Val Thr Ile  
65 70 75 80  
Arg Ala Val Phe Pro Asn Pro Asn Asn Glu Leu Leu Pro Gly Met Phe

				85					90					95					
Val	His	Ala	Gln	Leu	Gln	Glu	Gly	Val	Lys	Gln	Lys	Ala	Ile	Leu	Ala				
			100					105						110					
Pro	Gln	Gln	Gly	Val	Thr	Arg	Asp	Leu	Lys	Gly	Gln	Ala	Thr	Ala	Leu				
		115					120					125							
Val	Val	Asn	Ala	Gln	Asn	Lys	Val	Glu	Leu	Arg	Val	Ile	Lys	Ala	Asp				
		130				135					140								
Arg	Val	Ile	Gly	Asp	Lys	Trp	Leu	Val	Thr	Glu	Gly	Leu	Asn	Ala	Gly				
145					150					155					160				
Asp	Lys	Ile	Ile	Thr	Glu	Gly	Leu	Gln	Phe	Val	Gln	Pro	Gly	Val	Glu				
				165					170						175				
Val	Lys	Thr	Val	Pro	Ala	Lys	Asn	Val	Ala	Ser	Ala	Gln	Lys	Ala	Asp				
			180					185					190						
Ala	Ala	Pro	Ala	Lys	Thr	Asp	Ser	Lys	Gly										
		195					200												

<210> 150  
 <211> 128  
 <212> PRT  
 <213> Pseudomonas aeruginosa

Met	Ser	Lys	Phe	Phe	Ile	Asp	Arg	Pro	Ile	Phe	Ala	Trp	Val	Ile	Ala				
1				5				10						15					
Leu	Val	Ile	Met	Leu	Ala	Gly	Gly	Leu	Ser	Ile	Leu	Asn	Leu	Pro	Val				
			20					25					30						
Asn	Gln	Tyr	Pro	Ala	Ile	Ala	Pro	Pro	Ala	Ile	Ala	Val	Gln	Val	Ser				
		35					40					45							
Tyr	Pro	Gly	Ala	Ser	Ala	Glu	Thr	Val	Gln	Asp	Thr	Val	Val	Gln	Val				
		50				55					60								
Ile	Glu	Gln	Gln	Met	Asn	Gly	Ile	Asp	Asn	Leu	Arg	Tyr	Ile	Ser	Ser				
65					70				75					80					
Glu	Ser	Asn	Ser	Asp	Gly	Ser	Met	Thr	Ile	Thr	Val	Thr	Phe	Glu	Gln				
				85					90					95					
Gly	Thr	Asp	Pro	Asp	Ile	Ala	Gln	Val	Gln	Val	Gln	Asn	Lys	Leu	Gln				
			100					105					110						
Leu	Ala	Thr	Pro	Leu	Leu	Pro	Gln	Glu	Val	Gln	Arg	Gln	Gly	Ile	Arg				
		115					120					125							

<210> 151  
 <211> 372  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 151																			
cgacgtccag	ccggcctgaa	ccgtcgggtcg	ctgcgccctt	cccaagcggg	gagggcggta													60	
gcaaggttca	ttcgtccaat	caccgcgtcg	cccacgagac	cgccatgcaa	atcaaactcg													120	
ccaatccccg	cggcttctgc	gccggcgtgg	atcgcgccat	cgagatcgtc	aaccgtgccc													180	
tcgatgtctt	cggcccgcgc	atctacgtgc	gtcacgaggt	ggtgcacaac	aagttcgtcg													240	
tggacaacct	gcgccagcgc	ggcgccatct	tcgtcgagga	actcgatcag	gtgccggaca													300	
acgtcatcgt	catcttcagc	gcccacggcg	tttcccaagg	ggtccgcaag	gaagccgagg													360	
ggcgcggcct	ga																	372	

<210> 152  
 <211> 123  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 152

Arg Arg Pro Ala Gly Leu Asn Arg Arg Ser Leu Arg Pro Ser Gln Ala  
1 5 10 15  
Gly Arg Ala Val Ala Arg Phe Ile Arg Pro Ile Thr Ala Ser Pro Thr  
20 25 30  
Arg Pro Pro Cys Lys Ser Asn Ser Pro Ile Pro Ala Ala Ser Ala Pro  
35 40 45  
Ala Trp Ile Ala Pro Ser Arg Ser Ser Thr Val Pro Ser Met Ser Ser  
50 55 60  
Ala Arg Arg Ser Thr Cys Val Thr Arg Trp Cys Thr Thr Ser Ser Ser  
65 70 75 80  
Trp Thr Thr Cys Ala Ser Ala Ala Pro Ser Ser Ser Arg Asn Ser Ile  
85 90 95  
Arg Cys Arg Thr Thr Ser Ser Ser Ser Ser Ala Pro Thr Ala Phe Pro  
100 105 110  
Arg Arg Ser Ala Arg Lys Pro Arg Gly Ala Ala  
115 120

<210> 153

<211> 762

<212> DNA

<213> Pseudomonas aeruginosa

<400> 153

atgaacgaac	cgcaagcctt	cgcccagacc	gatgccgagt	ggctggcatc	gatcaaccgg	60
gcgcgcgact	ggttccaggg	cccgtcgggc	agcctgatgc	tggccgagga	gcgacgcctg	120
ttgtgcgacg	agctgaccgg	ttacttcggt	ggctacctgg	tgactacgg	gccgcatgcc	180
gaactgccgc	cgagcaccgg	gcagattcag	cgcggcgtgc	gcctggggcc	gccgctgccg	240
ggcgtggaca	tcgcctgcga	agagggcgcc	tggccgctca	gcgaacatgc	cgcggacgtg	300
gtcctgctgc	aacacggcct	ggatttctgc	ctgtcgcctc	accgtctcct	gcgcgaagcc	360
gcgcgtaccg	ttcgtccggg	cggccacctg	ctgtgatcgc	gcatcaacc	atggagcctg	420
tggggcatcc	gtcattatct	cgccggggat	gccttgccgc	aggcccgtg	cattcctccg	480
tcgcgggcct	gcgattggct	caacctgctg	ggcttcgcgc	tggagaaacg	gcgcttcggg	540
tgctatcgtc	cgcgcgttgc	gtcggcagcc	tggcaatcgc	gcctggctcg	cctggagcgc	600
tggggcgacg	cctggcagtc	ttcgggcgcc	ggcttctatc	tattggtggc	acgcaagctg	660
gtcgtggggt	tgcgcccggt	gcgccagagc	aagcgcgaac	cgcgcggtca	gctgggtgcc	720
atgccggtgg	cgaaagtcag	ccggcgagat	tccgaaattt	ag		762

<210> 154

<211> 801

<212> DNA

<213> Pseudomonas aeruginosa

<400> 154

atggagcctg	tggggcatcc	gtcattatct	cgccggggat	gccttgccgc	aggcccgtg	60
cattcctccg	tcgcgggcct	gcgattggct	caacctgctg	ggcttcgcgc	tggagaaacg	120
gcgcttcggg	tgctatcgtc	cgccgcttgc	gtcggcagcc	tggcaatcgc	gcctggctcg	180
cctggagcgc	tggggcgacg	cctggcagtc	ttcgggcgcc	ggcttctatc	tattggtggc	240
acgcaagctg	gtcgtggggt	tgcgcccggt	gcgccagagc	aagcgcgaac	cgcgcggtca	300
gctgggtgcc	atgccggtgg	cgaaagtcag	ccggcgagat	tccgaaattt	aggcatgaca	360
gataaagaac	aggtagtgat	ctataccgac	ggcgcctgca	agggcaacc	tgggcgcggc	420
ggctgggggg	cgttgctcct	ctacaagggc	gccgagcgag	agctttgggg	cggcgagccg	480
gacaccacca	acaaccgcat	ggagctgatg	gcggcgatcc	aggcgctggc	ggcactcaag	540
cgttcctgtc	cgatccgtct	gatcaccgac	tcggaatacg	tgatgcgcgc	catcaccgaa	600
tggttgccga	actggaagaa	gcgcggctgg	aagaccgcca	gcaagcagcc	tgtcaagaat	660
gccgacctct	ggcaggccct	ggatgaacag	gtcgcgccgc	accaggtgga	gtggcagtg	720
gtccgcgggc	ataccggcga	ccccggcaac	gagcggggcg	accagttggc	caaccgtggc	780
gtcgcgcaat	tgccgcgctg	a				801

<210> 155  
 <211> 513  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 155  
 atgacggatg cccacaggc tccatgggtt gatgccgatc agcagcaggt ggccgcccgg 60  
 acgaacggta cgcgcggctt cgcgcaggag acggtgaggc gacaggcaga aatccaggcc 120  
 gtgttgcagc aggaccacgt ccgcggcatg ttcgctgagc ggccaggcgc cctcttcgca 180  
 ggcgatgtcc acgcccggca gcggcggccc caggcgcacg ccgcgctgaa tctgcccggg 240  
 gctcggcggc agttcggcat gcggcccgtg gtgcaccagg tagccaccga agtaacgggt 300  
 cagctcgtcg cacaacaggc gtcgctcctc ggccagcatc aggctgcccc gcgggcccctg 360  
 gaaccagtcg cgcgcccggg tgatcgatgc cagccactcg gcatcggtct gggcgaaggc 420  
 ttgcggttcg ttcatgcgta cctccagcgt cttccccttc gcggcgacgg acgccggcac 480  
 gacgggaaaa taagcaatac tatgcgcaa tga 513

<210> 156  
 <211> 253  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 156  
 Met Asn Glu Pro Gln Ala Phe Ala Gln Thr Asp Ala Glu Trp Leu Ala  
 1 5 10 15  
 Ser Ile Asn Arg Ala Arg Asp Trp Phe Gln Gly Pro Leu Gly Ser Leu  
 20 25 30  
 Met Leu Ala Glu Glu Arg Arg Leu Leu Cys Asp Glu Leu Thr Arg Tyr  
 35 40 45  
 Phe Gly Gly Tyr Leu Val His Tyr Gly Pro His Ala Glu Leu Pro Pro  
 50 55 60  
 Ser Thr Gly Gln Ile Gln Arg Gly Val Arg Leu Gly Pro Pro Leu Pro  
 65 70 75 80  
 Gly Val Asp Ile Ala Cys Glu Glu Gly Ala Trp Pro Leu Ser Glu His  
 85 90 95  
 Ala Ala Asp Val Val Leu Leu Gln His Gly Leu Asp Phe Cys Leu Ser  
 100 105 110  
 Pro His Arg Leu Leu Arg Glu Ala Ala Arg Thr Val Arg Pro Gly Gly  
 115 120 125  
 His Leu Leu Leu Ile Gly Ile Asn Pro Trp Ser Leu Trp Gly Ile Arg  
 130 135 140  
 His Tyr Phe Ala Gly Asp Ala Leu Arg Gln Ala Arg Cys Ile Pro Pro  
 145 150 155 160  
 Ser Arg Ala Cys Asp Trp Leu Asn Leu Leu Gly Phe Ala Leu Glu Lys  
 165 170 175  
 Arg Arg Phe Gly Cys Tyr Arg Pro Pro Leu Ala Ser Ala Ala Trp Gln  
 180 185 190  
 Ser Arg Leu Ala Arg Leu Glu Arg Trp Gly Asp Ala Trp Gln Ser Ser  
 195 200 205  
 Gly Ala Gly Phe Tyr Leu Leu Val Ala Arg Lys Leu Val Val Gly Leu  
 210 215 220  
 Arg Pro Leu Arg Gln Ser Lys Arg Glu Pro Arg Gly Gln Leu Val Pro  
 225 230 235 240  
 Met Pro Val Ala Lys Val Ser Arg Arg Asp Ser Glu Ile  
 245 250

<210> 157  
 <211> 266  
 <212> PRT

<213> Pseudomonas aeruginosa

<400> 157

Met	Glu	Pro	Val	Gly	His	Pro	Ser	Leu	Phe	Arg	Arg	Gly	Cys	Leu	Ala
1				5					10					15	
Pro	Gly	Pro	Leu	His	Ser	Ser	Val	Ala	Gly	Leu	Arg	Leu	Ala	Gln	Pro
			20					25					30		
Ala	Gly	Leu	Arg	Ala	Gly	Glu	Thr	Ala	Leu	Arg	Val	Leu	Ser	Ser	Ala
		35					40					45			
Ala	Cys	Val	Gly	Ser	Leu	Ala	Ile	Ala	Pro	Gly	Ser	Pro	Gly	Ala	Leu
	50					55					60				
Gly	Arg	Arg	Leu	Ala	Val	Phe	Gly	Arg	Arg	Leu	Ser	Ile	Gly	Gly	
65					70					75				80	
Thr	Gln	Ala	Gly	Arg	Gly	Val	Ala	Pro	Val	Ala	Pro	Glu	Gln	Ala	Arg
				85					90					95	
Thr	Ala	Arg	Ser	Ala	Gly	Ala	His	Ala	Gly	Gly	Glu	Ser	Gln	Pro	Ala
			100					105					110		
Arg	Phe	Arg	Asn	Leu	Gly	Met	Thr	Asp	Lys	Glu	Gln	Val	Val	Ile	Tyr
		115					120					125			
Thr	Asp	Gly	Ala	Cys	Lys	Gly	Asn	Pro	Gly	Arg	Gly	Gly	Trp	Gly	Ala
	130					135					140				
Leu	Leu	Leu	Tyr	Lys	Gly	Ala	Glu	Arg	Glu	Leu	Trp	Gly	Gly	Glu	Pro
145					150					155					160
Asp	Thr	Thr	Asn	Asn	Arg	Met	Glu	Leu	Met	Ala	Ala	Ile	Gln	Ala	Leu
				165					170					175	
Ala	Ala	Leu	Lys	Arg	Ser	Cys	Pro	Ile	Arg	Leu	Ile	Thr	Asp	Ser	Glu
			180					185					190		
Tyr	Val	Met	Arg	Gly	Ile	Thr	Glu	Trp	Leu	Pro	Asn	Trp	Lys	Lys	Arg
		195					200					205			
Gly	Trp	Lys	Thr	Ala	Ser	Lys	Gln	Pro	Val	Lys	Asn	Ala	Asp	Leu	Trp
	210					215					220				
Gln	Ala	Leu	Asp	Glu	Gln	Val	Ala	Arg	His	Gln	Val	Glu	Trp	Gln	Trp
225					230					235					240
Val	Arg	Gly	His	Thr	Gly	Asp	Pro	Gly	Asn	Glu	Arg	Ala	Asp	Gln	Leu
				245					250					255	
Ala	Asn	Arg	Gly	Val	Ala	Glu	Leu	Pro	Arg						
			260					265							

<210> 158

<211> 170

<212> PRT

<213> Pseudomonas aeruginosa

<400> 158

Met	Thr	Asp	Ala	Pro	Gln	Ala	Pro	Trp	Val	Asp	Ala	Asp	Gln	Gln	Gln
1				5					10					15	
Val	Ala	Ala	Arg	Thr	Asn	Gly	Thr	Arg	Gly	Phe	Ala	Gln	Glu	Thr	Val
			20					25					30		
Arg	Arg	Gln	Ala	Glu	Ile	Gln	Ala	Val	Leu	Gln	Gln	Asp	His	Val	Arg
		35					40					45			
Gly	Met	Phe	Ala	Glu	Arg	Pro	Gly	Ala	Leu	Phe	Ala	Gly	Asp	Val	His
	50					55					60				
Ala	Arg	Gln	Arg	Arg	Pro	Gln	Ala	His	Ala	Ala	Leu	Asn	Leu	Pro	Gly
65					70					75					80
Ala	Arg	Arg	Gln	Phe	Gly	Met	Arg	Pro	Val	Val	His	Gln	Val	Ala	Thr
				85					90					95	
Glu	Val	Thr	Gly	Gln	Leu	Val	Ala	Gln	Gln	Ala	Ser	Leu	Leu	Gly	Gln
			100					105					110		

His Gln Ala Ala Gln Arg Ala Leu Glu Pro Val Ala Arg Pro Val Asp  
 115 120 125  
 Arg Cys Gln Pro Leu Gly Ile Gly Leu Gly Glu Gly Leu Arg Phe Val  
 130 135 140  
 His Ala Tyr Leu Gln Arg Leu Pro Leu Arg Gly Asp Gly Arg Arg His  
 145 150 155 160  
 Asp Gly Lys Ile Ser Asn Thr Met Arg Gln  
 165 170

<210> 159  
 <211> 759  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 159  
 atgcgggcgag atgccccatc cgacgccggc ttccaccaga cgcagcatgt cgtcgaagtt 60  
 ttccacgaag agcaccttgt cgctgaccgg ccgcagcagg ttccgaatgct gcccggagcg 120  
 gctgccgagg ctgatctgcc ggtaattggc caggctcgcg atgctgtgca gggaggcatt 180  
 gcacaacggg tgctgcggat gggcgacgac gaacgccttg gtgtagccga gcacgcactg 240  
 gttgaagcgg gagatcttca gttcctcgtc gatggtgatg gcgatatcga tttccgcgtt 300  
 gtcctgcttg atcgtcgcca ggctatcggc gggcgagggtg cgtatcaggc tgaccatggt 360  
 gaaatcgctg agcagtacgc tgctcaccgt atcgcagaac gacggcggga tggcgggtgtc 420  
 cagcagcacc cggagattgc gcggaccctt gttgagattg aaggcgatgt cgccgatcag 480  
 ctgctggtag ttcagcaggc tgcgcatgta agggatcagg cgaagcgcct gctcgggtggg 540  
 ttcgaccttg tagccgtccc gacggaccag ctccacgcac aggtcgattt ccaggttgct 600  
 gaccgccgag ctgaccgcgg tgtgcgactt gcgcaggatc cgcgacgcgg aggaaatcga 660  
 accggaggcg atgacctgga ggaacatggt cacgtgattc aggttatgaa taggcatccc 720  
 ttattccttt tattgggtgg cgcgtgccgc ttcccttga 759

<210> 160  
 <211> 1299  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 160  
 tatggatgcc agtcgattcg aactggcgga gattcgcacc atgcgagagt accaacgggtt 60  
 gaaaggggtt accgacaacc tggaattgct gcggcgcaac cgtgccacgg tcgagcacta 120  
 catgcgcatg aagggggcgg aacggttgca gcggcacagc ctgttcgtcg aggacggctg 180  
 cgccggcaac tggaccacgg aaagcggcga acccctggtt ttccggggcc atgagagcct 240  
 caggcggctc gccgagtggc tcgagcgctg cttccccgac tgggagtggc acaacgtgctg 300  
 gatcttcgag accgaggatc cgaaccacct ctgggtcgag tgcgacgggc gcggcaaggc 360  
 gctggtcccg gggatatccg agggctattg cgagaaccac tacatccatt ctttcgaact 420  
 cgagaacggc cggataaaac gcaatcgca gttcacgaac ccgatgcaga aattgcgtgc 480  
 attgggaata gccgttccgc aaataaaacg tgacggcatt cccacctgat taatgattat 540  
 tccaattcaa gaggagatat gacgatgctc gataatgcta ttccccaagg tttcgaagac 600  
 gccgtggagt tgcgcaggaa gaatcgcgag acggtggtca agtatatgaa caccaaaggc 660  
 caggatcgcc tgcgcgccca tgaacttttc gtcgaggacg gctgtggcgg tttatggacc 720  
 accgataccg gctcgcccat cgtcattcgt ggcaaggaca agctggccga gcacgcggtg 780  
 tggtcgctga aatgcttccc ggattgggag tggtaacaac tcaaggctct cgagaccgac 840  
 gatcccaacc acttctgggt cgagtgcgac ggccacggca agatcctctt ccccggggtat 900  
 cccgagggtt actacgagaa ccacttctcg cattccttcg agctggacga cggcaagatc 960  
 aagcgcaacc gcgaattcat gaacgtcttc cagcaattgc gcgccctgag cattccggtc 1020  
 ccgcagatca aacgcgaagg cattcccacc tgaggccatc ctggaagggg tgaactatgg 1080  
 acgatctatt gcaacgcgta cggcgctgct aagcgctgca gcaacccgaa tggggcgatc 1140  
 cgtcgcgcct gcgcgacgtg caggcgtacc tgcgcggcag tccggcgctg atccgcgccc 1200  
 gcgacatcct ggccctgcgc gcgaccctgg ccgggtcgcc cgcggcgagg cgctggtggt 1260  
 cgagtgcggc gactgcgccg aggacatgga cgaccacca 1299

<210> 161  
 <211> 162  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 161  
 Met Arg Glu Tyr Gln Arg Leu Lys Gly Phe Thr Asp Asn Leu Glu Leu  
 1 5 10 15  
 Arg Arg Arg Asn Arg Ala Thr Val Glu His Tyr Met Arg Met Lys Gly  
 20 25 30  
 Ala Glu Arg Leu Gln Arg His Ser Leu Phe Val Glu Asp Gly Cys Ala  
 35 40 45  
 Gly Asn Trp Thr Thr Glu Ser Gly Glu Pro Leu Val Phe Arg Gly His  
 50 55 60  
 Glu Ser Leu Arg Arg Leu Ala Glu Trp Leu Glu Arg Cys Phe Pro Asp  
 65 70 75 80  
 Trp Glu Trp His Asn Val Arg Ile Phe Glu Thr Glu Asp Pro Asn His  
 85 90 95  
 Leu Trp Val Glu Cys Asp Gly Arg Gly Lys Ala Leu Val Pro Gly Tyr  
 100 105 110  
 Pro Gln Gly Tyr Cys Glu Asn His Tyr Ile His Ser Phe Glu Leu Glu  
 115 120 125  
 Asn Gly Arg Ile Lys Arg Asn Arg Glu Phe Thr Asn Pro Met Gln Lys  
 130 135 140  
 Leu Arg Ala Leu Gly Ile Ala Val Pro Gln Ile Lys Arg Asp Gly Ile  
 145 150 155 160  
 Pro Thr

<210> 162  
 <211> 162  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 162  
 Met Leu Asp Asn Ala Ile Pro Gln Gly Phe Glu Asp Ala Val Glu Leu  
 1 5 10 15  
 Arg Arg Lys Asn Arg Glu Thr Val Val Lys Tyr Met Asn Thr Lys Gly  
 20 25 30  
 Gln Asp Arg Leu Arg Arg His Glu Leu Phe Val Glu Asp Gly Cys Gly  
 35 40 45  
 Gly Leu Trp Thr Thr Asp Thr Gly Ser Pro Ile Val Ile Arg Gly Lys  
 50 55 60  
 Asp Lys Leu Ala Glu His Ala Val Trp Ser Leu Lys Cys Phe Pro Asp  
 65 70 75 80  
 Trp Glu Trp Tyr Asn Ile Lys Val Phe Glu Thr Asp Asp Pro Asn His  
 85 90 95  
 Phe Trp Val Glu Cys Asp Gly His Gly Lys Ile Leu Phe Pro Gly Tyr  
 100 105 110  
 Pro Glu Gly Tyr Tyr Glu Asn His Phe Leu His Ser Phe Glu Leu Asp  
 115 120 125  
 Asp Gly Lys Ile Lys Arg Asn Arg Glu Phe Met Asn Val Phe Gln Gln  
 130 135 140  
 Leu Arg Ala Leu Ser Ile Pro Val Pro Gln Ile Lys Arg Glu Gly Ile  
 145 150 155 160  
 Pro Thr

<210> 163  
 <211> 74  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 163  
 Met Asp Asp Leu Leu Gln Arg Val Arg Arg Cys Glu Ala Leu Gln Gln  
   1                  5                  10                  15  
 Pro Glu Trp Gly Asp Pro Ser Arg Leu Arg Asp Val Gln Ala Tyr Leu  
           20                  25                  30  
 Arg Gly Ser Pro Ala Leu Ile Arg Ala Gly Asp Ile Leu Ala Leu Arg  
           35                  40                  45  
 Ala Thr Leu Ala Gly Ser Pro Ala Ala Arg Arg Trp Trp Cys Ser Ala  
       50                  55                  60  
 Ala Thr Ala Pro Arg Thr Trp Thr Thr Thr  
 65                  70

<210> 164  
 <211> 1161  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 164  
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 gagcgtgcga gaagaacaat gagaaagacc gccgtgaggg ccatcggaga gccgttctac 120  
 ggtttccgca aagatccggg gcgccgtccc ctccagcaca gcgcagttcc tgcgcggcgc 180  
 ctcggtgccg tgctcatcga gaagttctct tcagcctcgt ttcgtcgtcg cccggcgggc 240  
 ggcgaatggg ctcgacctcg tccggaacac ccgcacaggg ccggtggcga tatgtacttc 300  
 caggtccggc ttgataaagg gaattgtcat gagtggataa gacggaaaaca aaaaagaata 360  
 aaaacgctga agaaccgaat cctgccggga tcgattgttg actggtgaag ctggcatgca 420  
 tgatgagaga gagggatatc tcgagatttt gtcaagaata acaaccgagg aagagtctct 480  
 ctccctgggt ctcgagatat gcggttaatta tggattcgaa ttcttttcat tcggtgcgcg 540  
 ggcgcctttc ccgctgaccg cgcctaaata tcatttcctg tccaattacc cagggggaatg 600  
 gaaaagcaga tatatctccg aagactacac atccatcgac ccgatcgtgc gccatggtct 660  
 cctggaatac accccgctga tctggaatgg cgaagacttc caggagaacc gtttcttctg 720  
 ggaggaagcg ctgcatcacg gcatccgtca cggctggtcg atcccgggtcc gcggcaagta 780  
 cgggctgatac agcatgctgt ccctgggtgcg ttccagcgag agcatcgccg ctacggaaat 840  
 cctggagaag gaatccttcc tgctctggat caccagcatg ctgcaggcta ccttcggcga 900  
 cctgctggcg ccgcgcatcg tcccggaaaag caatgtgcgc ctgaccgcca gggaaaccga 960  
 gatgctcaag tggaccgcgg tgggcaagac ctacggcgag atcggcctga tcctgtcgat 1020  
 cgaccagcgc acggtgaaat tccatatcgt caatgcgatg cgcaagctca actccagcaa 1080  
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 gtcgcctagc gaggccgccg c 1161

<210> 165  
 <211> 238  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 165  
 Met His Asp Glu Arg Glu Gly Tyr Leu Glu Ile Leu Ser Arg Ile Thr  
   1                  5                  10                  15  
 Thr Glu Glu Glu Phe Phe Ser Leu Val Leu Glu Ile Cys Gly Asn Tyr  
           20                  25                  30  
 Gly Phe Glu Phe Phe Ser Phe Gly Ala Arg Ala Pro Phe Pro Leu Thr  
           35                  40                  45  
 Ala Pro Lys Tyr His Phe Leu Ser Asn Tyr Pro Gly Glu Trp Lys Ser  
       50                  55                  60

Arg	Tyr	Ile	Ser	Glu	Asp	Tyr	Thr	Ser	Ile	Asp	Pro	Ile	Val	Arg	His
65					70					75					80
Gly	Leu	Leu	Glu	Tyr	Thr	Pro	Leu	Ile	Trp	Asn	Gly	Glu	Asp	Phe	Gln
				85					90					95	
Glu	Asn	Arg	Phe	Phe	Trp	Glu	Glu	Ala	Leu	His	His	Gly	Ile	Arg	His
			100					105					110		
Gly	Trp	Ser	Ile	Pro	Val	Arg	Gly	Lys	Tyr	Gly	Leu	Ile	Ser	Met	Leu
		115					120					125			
Ser	Leu	Val	Arg	Ser	Ser	Glu	Ser	Ile	Ala	Ala	Thr	Glu	Ile	Leu	Glu
	130					135					140				
Lys	Glu	Ser	Phe	Leu	Leu	Trp	Ile	Thr	Ser	Met	Leu	Gln	Ala	Thr	Phe
145					150					155					160
Gly	Asp	Leu	Leu	Ala	Pro	Arg	Ile	Val	Pro	Glu	Ser	Asn	Val	Arg	Leu
			165						170					175	
Thr	Ala	Arg	Glu	Thr	Glu	Met	Leu	Lys	Trp	Thr	Ala	Val	Gly	Lys	Thr
		180						185					190		
Tyr	Gly	Glu	Ile	Gly	Leu	Ile	Leu	Ser	Ile	Asp	Gln	Arg	Thr	Val	Lys
	195						200					205			
Phe	His	Ile	Val	Asn	Ala	Met	Arg	Lys	Leu	Asn	Ser	Ser	Asn	Lys	Ala
	210					215					220				
Glu	Ala	Thr	Met	Lys	Ala	Tyr	Ala	Ile	Gly	Leu	Leu	Asn	Glx		
225					230					235					

<210> 166  
 <211> 633  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 166										
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caggccgacg	actataccgc	cggcaaggaa	tacgtcgagc	tgagcagccc	ggtgccggtg					120
tcccagccgg	gcaagatcga	agtgggtgaa	ctgttctggt	atggctgccc	gcattgctac					180
gcgttcgagc	cgaccatcgt	gccgtggagc	gagaagctgc	cggcagatgt	ccatttcgtg					240
cgctgcctg	ccctgttcgg	cggtatctgg	aacgtccatg	ggcagatgtt	cctgaccctg					300
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cacaagaagc	tcgccactcc	ggaagagatg	gccgatttcc	tcgccggcaa	gggcgtggac					420
aaggaaaaat	tcctgagcac	ctataattcc	tttgccatca	agggccagat	ggaaaaggcc					480
aagaagctgg	cgatggccta	ccaggtcacc	ggcgtaccga	ccatggtggt	caatggcaaa					540
taccgcttcg	acatcggctc	cgccggtggt	ccggaggaaa	ccctcaagct	ggccgactac					600
ctgatcgaga	aagagcgcg	ggccaagaag	tag							633

<210> 167  
 <211> 210  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 167															
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Gly	Met	Ala	Ala	Gln	Ala	Asp	Asp	Tyr	Thr	Ala	Gly	Lys	Glu	Tyr	Val
		20						25					30		
Glu	Leu	Ser	Ser	Pro	Val	Pro	Val	Ser	Gln	Pro	Gly	Lys	Ile	Glu	Val
		35					40					45			
Val	Glu	Leu	Phe	Trp	Tyr	Gly	Cys	Pro	His	Cys	Tyr	Ala	Phe	Glu	Pro
	50					55					60				
Thr	Ile	Val	Pro	Trp	Ser	Glu	Lys	Leu	Pro	Ala	Asp	Val	His	Phe	Val
65					70					75				80	
Arg	Leu	Pro	Ala	Leu	Phe	Gly	Gly	Ile	Trp	Asn	Val	His	Gly	Gln	Met

				85					90					95					
Phe	Leu	Thr	Leu	Glu	Ser	Met	Gly	Val	Glu	His	Asp	Val	His	Asn	Ala				
			100					105					110						
Val	Phe	Glu	Ala	Ile	His	Lys	Glu	His	Lys	Lys	Leu	Ala	Thr	Pro	Glu				
		115					120					125							
Glu	Met	Ala	Asp	Phe	Leu	Ala	Gly	Lys	Gly	Val	Asp	Lys	Glu	Lys	Phe				
	130					135					140								
Leu	Ser	Thr	Tyr	Asn	Ser	Phe	Ala	Ile	Lys	Gly	Gln	Met	Glu	Lys	Ala				
145					150					155					160				
Lys	Lys	Leu	Ala	Met	Ala	Tyr	Gln	Val	Thr	Gly	Val	Pro	Thr	Met	Val				
				165					170					175					
Val	Asn	Gly	Lys	Tyr	Arg	Phe	Asp	Ile	Gly	Ser	Ala	Gly	Gly	Pro	Glu				
		180						185				190							
Glu	Thr	Leu	Lys	Leu	Ala	Asp	Tyr	Leu	Ile	Glu	Lys	Glu	Arg	Ala	Ala				
		195					200					205							
Lys	Lys																		
	210																		

<210> 168  
 <211> 3010  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 168

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ggccctgtat	cctccccgca	cgagtcgcaa	agccgcgcgt	tgccgctatc	acaagcttta	180
tggaacaatg	cgggcacatg	cgatttcgag	gatgtcccag	cgtgatcgat	tccgatgggt	240
ttcgcccga	tgtcggcatc	attctcgcca	acgaggcggg	gcaggtgctg	tgggcgcggc	300
gtatcaatca	ggaagcctgg	cagttcccg	agggaggcat	caatgatcgc	gaaacgccgg	360
aagaggcgct	gtatcgcgaa	ttgaacgaag	aagtcgggct	ggaggccggg	gacgtgcgca	420
tcctggcctg	caccgcggcg	tggctgcgct	accgtttgcc	gcagcgccctg	gtgcggaccc	480
acagccagcc	gctgtgcatc	ggccagaagc	agaaatggtt	cctgctgcgg	ctgatgtccg	540
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tgagtactg	gtacccccct	ggacaggtgg	tgaccttcaa	gcgcgaggtc	taccgcgcgc	660
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cgggtgatgg	gggtgctggg	ggtgcagcag	aaggagcgcc	gccagttcga	cgaaggcgag	1140
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cagttgcgca	aggaagaacg	cgcgctgttc	gacgtctacc	tgatgatgct	gcacgatgcc	1500
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gaggtctaca	ccaacccctc	cgccgagctg	gtgcgccagt	acagcgacgt	ggtcgccgag	1980
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cgcttcccca  gcgagaagga  acagctggcg  atctaccgcg  agcagctcag  tgccttcac  2220
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gacctgctcg  gccagttgct  caccttcgac  aaccgcgagg  tcatccacag  ctcgctgcac  2940
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tgattttccc  3010

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<210> 169  
 <211> 159  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

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<400> 169
Met Ile Asp Ser Asp Gly Phe Arg Pro Asn Val Gly Ile Ile Leu Ala
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Asn Glu Ala Gly Gln Val Leu Trp Ala Arg Arg Ile Asn Gln Glu Ala
 20            25            30
Trp Gln Phe Pro Gln Gly Gly Ile Asn Asp Arg Glu Thr Pro Glu Glu
 35            40            45
Ala Leu Tyr Arg Glu Leu Asn Glu Glu Val Gly Leu Glu Ala Gly Asp
 50            55            60
Val Arg Ile Leu Ala Cys Thr Arg Gly Trp Leu Arg Tyr Arg Leu Pro
 65            70            75            80
Gln Arg Leu Val Arg Thr His Ser Gln Pro Leu Cys Ile Gly Gln Lys
 85            90            95
Gln Lys Trp Phe Leu Leu Arg Leu Met Ser Asp Glu Ala Arg Val Arg
100           105           110
Met Asp Ile Thr Ser Lys Pro Glu Phe Asp Gly Trp Arg Trp Val Ser
115           120           125
Tyr Trp Tyr Pro Leu Gly Gln Val Val Thr Phe Lys Arg Glu Val Tyr
130           135           140
Arg Arg Ala Leu Lys Glu Leu Ala Pro Arg Leu Leu Ala Arg Asp
145           150           155

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<210> 170  
 <211> 759  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

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<400> 170
Met Leu Asn Thr Leu Arg Lys Ile Val Gln Glu Val Asn Ser Ala Lys
 1             5             10             15
Asp Leu Lys Ala Ala Leu Gly Ile Ile Val Gln Arg Val Lys Glu Ala
 20            25            30
Met Gly Thr Gln Val Cys Ser Val Tyr Leu Leu Asp Thr Glu Thr Gln
 35            40            45
Arg Phe Val Leu Met Ala Thr Glu Gly Leu Asn Lys Arg Ser Ile Gly

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50		55		60
Lys Val Ser Met Ala Pro Ser Glu Gly Leu Val Gly Leu Val Gly Thr				
65	70		75	80
Arg Glu Glu Pro Leu Asn Leu Glu Asn Ala Ala His Pro Arg Tyr				
	85	90		95
Arg Tyr Phe Ala Glu Thr Gly Glu Glu Arg Tyr Ala Ser Phe Leu Gly				
	100	105		110
Ala Pro Ile Ile His His Arg Arg Val Met Gly Val Leu Val Val Gln				
	115	120		125
Gln Lys Glu Arg Arg Gln Phe Asp Glu Gly Glu Glu Ala Phe Leu Val				
	130	135		140
Thr Met Ser Ala Gln Leu Ala Gly Val Ile Ala His Ala Glu Ala Thr				
	145	150		155
Gly Ser Ile Arg Gly Leu Gly Lys Leu Gly Lys Gly Ile Gln Glu Ala				
	165	170		175
Lys Phe Val Gly Val Pro Gly Ala Pro Gly Val Gly Val Gly Lys Ala				
	180	185		190
Val Val Val Leu Pro Pro Ala Asp Leu Glu Val Val Pro Asp Lys Gln				
	195	200		205
Val Asp Asp Ile Asp Ala Glu Ile Ala Leu Phe Lys Gln Ala Leu Glu				
	210	215		220
Gly Val Arg Ala Asp Met Arg Ala Leu Ser Ser Lys Leu Ala Ser Gln				
	225	230		235
Leu Arg Lys Glu Glu Arg Ala Leu Phe Asp Val Tyr Leu Met Met Leu				
	245	250		255
Asp Asp Ala Ser Ile Gly Asn Glu Val Lys Arg Ile Ile Arg Thr Gly				
	260	265		270
Gln Trp Ala Gln Gly Ala Leu Arg Gln Val Val Met Glu His Val Gln				
	275	280		285
Arg Phe Glu Leu Met Asp Asp Ala Tyr Leu Arg Glu Arg Ala Ser Asp				
	290	295		300
Val Lys Asp Ile Gly Arg Arg Leu Leu Ala Tyr Leu Gln Glu Glu Arg				
	305	310		315
Lys Gln Asn Leu Thr Tyr Pro Glu Gln Thr Ile Ile Val Ser Glu Glu				
	325	330		335
Leu Ser Pro Ala Met Leu Gly Glu Val Pro Glu Gly Arg Leu Val Gly				
	340	345		350
Leu Val Ser Val Leu Gly Ser Gly Asn Ser His Val Ala Ile Leu Ala				
	355	360		365
Arg Ala Met Gly Ile Pro Thr Val Met Gly Ala Val Asp Leu Pro Tyr				
	370	375		380
Ser Lys Val Asp Gly Ile Asp Leu Ile Val Asp Gly Tyr His Gly Glu				
	385	390		395
Val Tyr Thr Asn Pro Ser Ala Glu Leu Val Arg Gln Tyr Ser Asp Val				
	405	410		415
Val Ala Glu Glu Arg Glu Leu Ser Lys Gly Leu Ala Ala Leu Arg Glu				
	420	425		430
Leu Pro Cys Glu Thr Leu Asp Gly His Arg Met Pro Leu Trp Val Asn				
	435	440		445
Thr Gly Leu Leu Ala Asp Val Ala Arg Ala Gln Glu Arg Gly Ala Glu				
	450	455		460
Gly Val Gly Leu Tyr Arg Thr Glu Val Pro Phe Met Ile Asn Asp Arg				
	465	470		475
Phe Pro Ser Glu Lys Glu Gln Leu Ala Ile Tyr Arg Glu Gln Leu Ser				
	485	490		495
Ala Phe His Pro Leu Pro Val Thr Met Arg Thr Leu Asp Ile Gly Gly				
	500	505		510
Asp Lys Ala Leu Ser Tyr Phe Pro Ile Lys Glu Asp Asn Pro Phe Leu				
	515	520		525

Gly	Trp	Arg	Gly	Ile	Arg	Val	Thr	Leu	Asp	His	Pro	Glu	Ile	Phe	Leu
530						535					540				
Val	Gln	Thr	Arg	Ala	Met	Leu	Lys	Ala	Ser	Glu	Gly	Leu	Asp	Asn	Leu
545					550					555					560
Arg	Ile	Leu	Leu	Pro	Met	Ile	Ser	Gly	Thr	His	Glu	Leu	Glu	Glu	Ala
				565					570						575
Leu	His	Leu	Ile	His	Arg	Ala	Trp	Gly	Glu	Val	Arg	Asp	Glu	Gly	Val
			580					585					590		
Asp	Ile	Ala	Met	Pro	Pro	Ile	Gly	Met	Met	Val	Glu	Ile	Pro	Ala	Ala
		595					600					605			
Val	Tyr	Gln	Thr	Arg	Glu	Leu	Ala	Arg	Gln	Val	Asp	Phe	Leu	Ser	Val
	610					615					620				
Gly	Ser	Asn	Asp	Leu	Thr	Gln	Tyr	Leu	Leu	Ala	Val	Asp	Arg	Asn	Asn
625					630					635					640
Pro	Arg	Val	Ala	Asp	Leu	Tyr	Asp	Tyr	Leu	His	Pro	Ala	Val	Leu	His
				645					650						655
Ala	Leu	Lys	Lys	Val	Val	Asp	Asp	Ala	His	Leu	Glu	Gly	Lys	Pro	Val
			660					665					670		
Ser	Ile	Cys	Gly	Glu	Met	Ala	Gly	Asp	Pro	Ala	Ala	Ala	Val	Leu	Leu
		675					680					685			
Met	Ala	Met	Gly	Phe	Asp	Ser	Leu	Ser	Met	Asn	Ala	Thr	Asn	Leu	Pro
	690					695					700				
Lys	Val	Lys	Trp	Leu	Leu	Arg	Gln	Ile	Thr	Leu	Asp	Lys	Ala	Arg	Asp
705					710					715					720
Leu	Leu	Gly	Gln	Leu	Leu	Thr	Phe	Asp	Asn	Pro	Gln	Val	Ile	His	Ser
				725					730					735	
Ser	Leu	His	Leu	Ala	Leu	Arg	Asn	Leu	Gly	Leu	Gly	Arg	Val	Ile	Asn
			740					745					750		
Pro	Ala	Ala	Thr	Val	Gln	Pro									
			755												

<210> 171  
 <211> 1512  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 171																
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tcgattcgt	aactcgcg	cttgcccgg	aaggggcacc	gcaactcac	agcggcgca											360
cagtagcata	taatcaatc	tgagtga	attaattgg	gtttctgta	catatccta											420
tgatctgcg	cgcctttcc	ttgtgagg	gttcagtgg	caggaaaacc	aaagagga											480
cccagaaa	ccgcgatgg	atactcgat	ccgccgagc	ggttttcct	gaaaagggc											540
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aactgccgg	gcggctgg	gtcgagctg	ccagcatct	tctgcaatc	ctgtgggac											960
gcatctgcg	caccctggc	tggaaccg	gcttgcgca	cgatccctg	agccgcgcc											1020
aacgcagt	ccgcgccgg	ctcgatagc	tgcgagttc	tccctacct	ttgctggcg											1080
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ccaccagcc	ctgggcgtc	tcctcgctg	tgtgcaggc	cttgccatc	atgtagagc											1200
ccgacaggc	cgcctcggc	tcggtaccg	tgcgaggct	gtcgaccgc	gcgcgatgc											1260

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acggtagctt cagccagcg tcacgcgcct gccaccgcgc ttggctgcaa tcgtccgcag 1440
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tgggactggt ga 1512

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<210> 172

<211> 210

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 172

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Ala Leu Asp Ile Leu Leu Arg Ala Gly Met Gly Phe Leu Arg Gln Cys
          85          90          95
Cys Glu Pro Gly Ser Val Gln Arg Val Leu Glu Ile Leu Tyr Leu Lys
          100          105          110
Cys Glu Arg Ser Asp Glu Asn Glu Pro Leu Leu Arg Arg Arg Glu Leu
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Leu Glu Lys Gln Gly Gln Arg Phe Gly Arg Arg Gln Ile Arg Arg Ala
          130          135          140
Val Glu Arg Gly Glu Leu Pro Ala Arg Leu Asp Val Glu Leu Ala Ser
          145          150          155          160
Ile Tyr Leu Gln Ser Leu Trp Asp Gly Ile Cys Gly Thr Leu Ala Trp
          165          170          175
Thr Glu Arg Leu Arg Asp Asp Pro Trp Ser Arg Ala Glu Arg Met Phe
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Asp Ala
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<210> 173

<211> 3119

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 173

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<210> 174

<211> 338

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 174

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Ala	Glu	Leu		Ile	Pro	Ala	Ser	Ser	Asp	Ala	Ser	Phe	Arg	Arg	Tyr
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Arg	Val	Phe	Val	His	Arg	Asp	Tyr	Met	Pro	Arg	Asn	Leu	Met	Leu	Ser		
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Val	Thr	Tyr	Asp	Val	Thr	Cys	Leu	Tyr	Lys	Asp	Ala	Phe	Val	Ser	Trp		
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<210> 175  
 <211> 224  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 175

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Gly	Glu	Gln	Pro	Phe	Leu	Leu	Leu	Asn	Gly	Asp	Val	Trp	Ser	Asp	Phe		
	100						105					110					
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			180					185					190		
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<210> 176  
 <211> 252  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 176

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			20					25					30		
Asp	Arg	Arg	Leu	Arg	Leu	Glu	Ser	Trp	Arg	Gly	Leu	Leu	Ala	Arg	Leu
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Gln	Ala	Arg	Glu	Glu	Met	Ala	Leu	Arg	Lys	Leu	Asp	Arg	Arg	Ala	Gln
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Arg	Arg	Ala	Ile	Ala	Ser	Phe	Gly	Lys	Gly	Lys	Ala	Gly	Ile	Ala	His
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		180						185						190	
Val	Glu	Ala	Gly	Ser	Glu	Pro	Ala	Leu	Ile	Lys	Arg	Ala	Tyr	Arg	Lys
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<210> 189  
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<210> 190

<211> 1920

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 190

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acagacgatt	tgatgcaact	tcttggtaat	atcaattcgc	cactagaaga	gctagacact	1380
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ccactaggga	ccaaggagcc	aacagattgc	gctcctgaag	caattgaaga	tgtatttatg	1500
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gcccgtcgcc	tggtcatcaa	cgacaccaag	gctttgggtg	ataccgtaga	cgggaccgcc	1620
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ctggcccaag	ccaaggagac	gaccggctgg	aagctggtgc	agcgcgcggt	cgaaaaacag	1740
gggcttcatc	ggaagaccag	taaaaacctg	aacatctgga	ccatcaaggt	ttctggctct	1800
cgcaagacga	aagagctcaa	ggcctacctg	ctccaggatc	ccaaattgct	gttccctgag	1860
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<210> 191

<211> 1827

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 191

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ctggtccagc	agctccctgc	ttcggaata	catcaccatg	cccatccagg	cgggatgatc	180

gatcacggcc	tggagatcgt	ggcctacgca	ctcaaggtaac	ggcagaccta	cctgctcccc	240
atcggcgcag	cgccggagtc	acagtcagcc	caggctgaag	cctggctcggc	cgccgcggcg	300
tatggcgccc	tggctcatga	cataggcaag	atcgctcgtc	acctgcaggt	tgagctacag	360
gacggcagca	cctggcacc	ttggaacgga	ccgatcaacc	agccataccg	cttcaagtac	420
gtgaagtccc	gcgaatacca	gtccacggc	gctgctcag	cacttctcat	ccaccaactg	480
ctaccgcgca	ctgcaactcga	ttggctcagt	cgctttccag	agctgtgggc	tcaattgatc	540
tacctgttcg	ctgggcagta	cgagcacgcc	gggatcctcg	gcgagatcat	cgtgaaggca	600
gaccaggcct	cagttgcaca	ggagctagga	ggcaatccgg	atcgagctct	ggctgcaccg	660
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aagttcacgc	tactcaagat	tgctccagcc	ttgatctgga	cagatgctgc	cgagcgcccc	1020
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acgacctgtg	aaattcccaa	cgggccggct	gaacagcagc	aagcaccaga	aacgaagatg	1140
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gtccaagagc	atccggtgct	tgaaaaactg	gcccgaagcca	aggagacgac	cggctggaag	1620
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atctggacca	tcaaggtttc	tggtcctcgc	aagacgaaag	agctcaaggc	ctacctgctc	1740
caggatccca	aattgctgtt	ccctgagcag	cctctggaca	acccaagcct	cacggtcatc	1800
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<210> 192

<211> 1653

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 192

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gcggcgatag	gcgccctggc	tcattgacata	ggcaagatcg	tcgtcgacct	gcaggttgag	180
ctacaggacg	gcagcacctg	gcacccttgg	aacggaccga	tcaaccagcc	ataccgcttc	240
aagtacgtga	agtcccgcga	ataccagctc	cacggcgctg	cctcagcact	tctcatccac	300
caactgctac	cgcgcaactg	actcgattgg	ctcagtcgct	ttccagagct	gtgggctcaa	360
ttgatctacc	tgttcgctgg	gcagtacgag	cacgccggga	tcctcgcgga	gatcatcggt	420
aaggcagacc	aggcctcagt	tgcacaggag	ctaggaggca	atccggatcg	agctctggct	480
gcaccgaagc	agtgcgtgca	gcggcagttg	gcagacggcc	ttcgcttctt	ggtgaaggac	540
aagttcaagt	tgaatcaacc	tagcggcccc	tctgatggat	ggctgaccca	ggacgcactc	600
tggtctggtg	gcaagcctgc	tgccgatcaa	ctgagagcct	acctgctggc	ccagggtatc	660
gatgggggtg	cctcctctaa	cgcgccgttc	ttcagcatgc	tccaggacca	agccgtcatc	720
cagacaaatg	ccgaggacaa	ggccatttgg	acggccacgg	tagacaacgg	tgctggatgg	780
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cgccccctac	cctacagcgg	atcactggct	gttgaagatg	gaaccgcctc	aacggaaaag	900
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aagatgatgc	tccatcaacc	tgcgccgagc	gttgcgaaac	cggcaaacga	gacgcaggcg	1020
attgcgaaac	cctcaactga	tgatcaagaa	gaaacagacg	atattgtatgc	acttcttgggt	1080
aatatcaatt	cgccactaga	agagctagac	actagccacg	actcgccggc	tgctctctct	1140
acgaacacac	gcggggagga	gaacctacag	cagccactag	ggaccaagga	gccaacagat	1200
tgcgctcctg	aagcaattga	agatgtatct	atgcctagca	gaagtactga	tctgggacag	1260
ggattcggtg	gttggatgaa	atctggcatc	gcggccccgc	gcctgttcat	caacgacacc	1320
aaggcttttg	tgcataccgt	agacgggacc	gccatgctgg	tcacgccagg	aattttcaag	1380
cgctatgtcc	aagagcatcc	ggtgcttgaa	aaactggccc	aagccaagga	gacgaccggc	1440

tggaagctgg	tgcagcgcg	gttcgaaaaa	caggggcttc	atcggaagac	cagtaaaaac	1500
ctgaacatct	ggaccatcaa	ggtttctggt	cctcgcaaga	cgaaagagct	caaggcctac	1560
ctgctccagg	atcccaaatt	gctgttcct	gagcagcctc	tggacaaccc	aagcctcacg	1620
gtcatcaccg	atgccgaagg	aggtgtggaa	tga			1653

<210> 193  
 <211> 957  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 193						
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acggtagaca	acggtgctgg	atggagaaac	aagttcacgc	tactcaagat	tgctccagcc	120
ttgatctgga	cagatgctgc	cgagcgcccc	tcaccctaca	gcggatcact	ggtcgttgaa	180
gatggaaccg	cctcaacgga	aaagccggaa	acgacctgtg	aaattcccaa	cgggccggct	240
gaacagcagc	aagcaccaga	aacgaagatg	atgctccatc	aacctgcgcc	gagcgttgcg	300
aaaccggcaa	acgagacgca	ggcgattgcg	aaaccctcaa	ctgatgatca	agaagaaaca	360
gacgatttgt	atgcacttct	tggtaatatc	aattcgccac	tagaagagct	agacactagc	420
cacgactcgc	cggctgcctc	tcctacgaac	acacgcgggg	aggagaacct	acagcagcca	480
ctagggacca	aggagccaac	agattgcgct	cctgaagcaa	ttgaagatgt	atttatgcct	540
agcagaagta	ctgatctggg	acagggattc	gttggttgga	tgaatcttgg	catcgcggcc	600
cgctgcctgt	tcatcaacga	caccaaggct	ttggtgcata	ccgtagacgg	gaccgccatg	660
ctggtcacgc	caggaatttt	caagcgctat	gtccaagagc	atccggtgct	tgaaaaactg	720
gcccaagcca	aggagacgac	cggctggaag	ctggtgcagc	gcgcgttcga	aaaacagggg	780
cttcatcgga	agaccagtaa	aaacctgaac	atctggacca	tcaaggtttc	tggtcctcgc	840
aagacgaaa	agctcaaggc	ctacctgctc	caggatccca	aattgctgtt	ccctgagcag	900
cctctggaca	acccaagcct	cacggtcatc	accgatgccg	aaggaggtgt	ggaatga	957

<210> 194  
 <211> 690  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 194						
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gcgaaaccct	caactgatga	tcaagaagaa	acagacgatt	tgtatgcact	tcttggtaat	120
atcaattcgc	cactagaaga	gctagacact	agccacgact	cgccggctgc	ctctcctacg	180
aacacacgcg	gggaggagaa	cctacagcag	ccactaggga	ccaaggagcc	aacagattgc	240
gctcctgaag	caattgaaga	tgtatttatg	cctagcagaa	gtactgatct	gggacagggg	300
ttcggttggt	ggatgaaatc	tggcatcgcg	gcccgtcgcc	tgttcatcaa	cgacaccaag	360
gctttggtgc	ataccgtaga	cgggaccgcc	atgctggtca	cgccagggaat	tttcaagcgc	420
tatgtccaag	agcatccggt	gcttgaaaaa	ctggcccaag	ccaaggagac	gaccggctgg	480
aagctggtgc	agcgcgcgtt	cgaaaaacag	gggcttcac	ggaagaccag	taaaaacctg	540
aacatctgga	ccatcaaggt	ttctggtcct	cgcaagacga	aagagctcaa	ggcctacctg	600
ctccaggatc	ccaaattgct	gttccttgag	cagcctctgg	acaacccaag	cctcacggtc	660
atcaccgatg	ccgaaggagg	tgtggaatga				690

<210> 195  
 <211> 687  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 195						
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aaaccctcaa	ctgatgatca	agaagaaaca	gacgatttgt	atgcacttct	tggtaatatc	120
aattcgccac	tagaagagct	agacactagc	cacgactcgc	cggctgcctc	tcctacgaac	180
acacgcgggg	aggagaacct	acagcagcca	ctagggacca	aggagccaac	agattgcgct	240
cctgaagcaa	ttgaagatgt	atttatgcct	agcagaagta	ctgatctggg	acagggattc	300
gttggttgga	tgaatcttgg	catcgcggcc	cgctgcctgt	tcatcaacga	caccaaggct	360

ttggtgcata	cgcgtagacgg	gaccgccatg	ctgggtcacgc	caggaat	caagcgctat	420
gtccaagagc	atccggtgct	tgaaaaactg	gcccgaagcca	aggagacgac	cggctggaag	480
ctgggtgcagc	gcgcggttcga	aaaacagggg	cttcatcgga	agaccagtaa	aaacctgaac	540
atctggacca	tcaaggtttc	tggtcctcgc	aagacgaaag	agctcaaggc	ctacctgctc	600
caggatccca	aattgctggt	ccctgagcag	cctctggaca	acccaagcct	cacgggtcatc	660
accgatgccg	aaggaggtgt	ggaatga				687

<210> 196  
 <211> 423  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 196						
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gcgccccgtc	gcctgttcat	caacgacacc	aaggcttttg	tgcataccgt	agacgggacc	120
gccatgctgg	tcacgccagg	aattttcaag	cgctatgtcc	aagagcatcc	ggtgcttgaa	180
aaactggccc	aagccaagga	gacgaccggc	tggaagctgg	tgcagcgcg	gttcgaaaaa	240
caggggcttc	atcggaagac	cagtaaaaac	ctgaacatct	ggaccatcaa	ggtttctggt	300
cctcgcaaga	cgaaagagct	caaggcctac	ctgctccagg	atcccaaatt	gctgttcctc	360
gagcagcctc	tggacaaccc	aagcctcacg	gtcatcaccg	atgccgaagg	aggtgtggaa	420
tga						423

<210> 197  
 <211> 378  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 197						
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accgtagacg	ggaccgcat	gctgggtcacg	ccaggaat	tcaagcgcta	tgtccaagag	120
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cgcgcggttc	aaaaacaggg	gcttcatcgg	aagaccagta	aaaacctgaa	catctggacc	240
atcaaggttt	ctgggtcctc	caagacgaaa	gagctcaagg	cctacctgct	ccaggatccc	300
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gaaggaggtg	tggaatga					378

<210> 198  
 <211> 300  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 198						
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gggcttcatc	ggaagaccag	taaaaacctg	aacatctgga	ccatcaagg	ttctgggtcct	180
cgcaagacga	aagagctcaa	ggcctacctg	ctccaggatc	ccaaattgct	gttccctgag	240
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<210> 199  
 <211> 643  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 199															
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			20					25						30	

Leu	Ser	Ser	Met	Glu	Leu	Leu	Gly	Thr	Pro	Arg	Arg	Arg	Gln	Leu	Leu
		35					40					45			
Glu	Asn	Ile	Trp	Gln	Arg	Ala	Ser	Leu	Ser	Lys	Gln	Gln	Phe	Glu	Glu
	50					55					60				
Ile	Tyr	Arg	Arg	Pro	Leu	Ala	Asn	Tyr	Ala	Glu	Leu	Val	Gln	Gln	Leu
	65				70					75					80
Pro	Ala	Ser	Glu	Asn	His	His	His	Ala	His	Pro	Gly	Gly	Met	Ile	Asp
				85					90					95	
His	Gly	Leu	Glu	Ile	Val	Ala	Tyr	Ala	Leu	Lys	Val	Arg	Gln	Thr	Tyr
		100						105					110		
Leu	Leu	Pro	Ile	Gly	Ala	Ala	Pro	Glu	Ser	Gln	Ser	Ala	Gln	Ala	Glu
		115						120				125			
Ala	Trp	Ser	Ala	Ala	Ala	Ala	Tyr	Gly	Ala	Leu	Ala	His	Asp	Ile	Gly
	130					135					140				
Lys	Ile	Val	Val	Asp	Leu	Gln	Val	Glu	Leu	Gln	Asp	Gly	Ser	Thr	Trp
	145				150					155					160
His	Pro	Trp	Asn	Gly	Pro	Ile	Asn	Gln	Pro	Tyr	Arg	Phe	Lys	Tyr	Val
			165						170					175	
Lys	Ser	Arg	Glu	Tyr	Gln	Leu	His	Gly	Ala	Ala	Ser	Ala	Leu	Leu	Ile
			180					185					190		
His	Gln	Leu	Leu	Pro	Arg	Thr	Ala	Leu	Asp	Trp	Leu	Ser	Arg	Phe	Pro
		195					200					205			
Glu	Leu	Trp	Ala	Gln	Leu	Ile	Tyr	Leu	Phe	Ala	Gly	Gln	Tyr	Glu	His
	210					215					220				
Ala	Gly	Ile	Leu	Gly	Glu	Ile	Ile	Val	Lys	Ala	Asp	Gln	Ala	Ser	Val
	225				230					235					240
Ala	Gln	Glu	Leu	Gly	Gly	Asn	Pro	Asp	Arg	Ala	Leu	Ala	Ala	Pro	Lys
				245					250					255	
Gln	Ser	Leu	Gln	Arg	Gln	Leu	Ala	Asp	Gly	Leu	Arg	Phe	Leu	Val	Lys
			260					265					270		
Asp	Lys	Phe	Lys	Leu	Asn	Gln	Pro	Ser	Gly	Pro	Ser	Asp	Gly	Trp	Leu
		275					280					285			
Thr	Gln	Asp	Ala	Leu	Trp	Leu	Val	Ser	Lys	Pro	Ala	Ala	Asp	Gln	Leu
	290					295					300				
Arg	Ala	Tyr	Leu	Leu	Ala	Gln	Gly	Ile	Asp	Gly	Val	Pro	Ser	Ser	Asn
	305				310					315					320
Ala	Pro	Phe	Phe	Ser	Met	Leu	Gln	Asp	Gln	Ala	Val	Ile	Gln	Thr	Asn
				325					330					335	
Ala	Glu	Asp	Lys	Ala	Ile	Trp	Thr	Ala	Thr	Val	Asp	Asn	Gly	Ala	Gly
			340					345					350		
Trp	Arg	Asn	Lys	Phe	Thr	Leu	Leu	Lys	Ile	Ala	Pro	Ala	Leu	Ile	Trp
		355					360					365			
Thr	Asp	Ala	Ala	Glu	Arg	Pro	Ser	Pro	Tyr	Ser	Gly	Ser	Leu	Val	Val
	370					375					380				
Glu	Asp	Gly	Thr	Ala	Ser	Thr	Glu	Lys	Pro	Glu	Thr	Thr	Cys	Glu	Ile
	385				390					395					400
Pro	Asn	Gly	Pro	Ala	Glu	Gln	Gln	Gln	Ala	Pro	Glu	Thr	Lys	Met	Met
				405					410					415	
Leu	His	Gln	Pro	Ala	Pro	Ser	Val	Ala	Lys	Pro	Ala	Asn	Glu	Thr	Gln
			420					425					430		
Ala	Ile	Ala	Lys	Pro	Ser	Thr	Asp	Asp	Gln	Glu	Glu	Thr	Asp	Asp	Leu
		435					440					445			
Tyr	Ala	Leu	Leu	Gly	Asn	Ile	Asn	Ser	Pro	Leu	Glu	Glu	Leu	Asp	Thr
	450					455					460				
Ser	His	Asp	Ser	Pro	Ala	Ala	Ser	Pro	Thr	Asn	Thr	Arg	Gly	Glu	Glu
	465				470					475					480
Asn	Leu	Gln	Gln	Pro	Leu	Gly	Thr	Lys	Glu	Pro	Thr	Asp	Cys	Ala	Pro
				485					490					495	
Glu	Ala	Ile	Glu	Asp	Val	Phe	Met	Pro	Ser	Arg	Ser	Thr	Asp	Leu	Gly

			500					505				510			
Gln	Gly	Phe	Val	Gly	Trp	Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg	Arg	Leu
		515					520					525			
Phe	Ile	Asn	Asp	Thr	Lys	Ala	Leu	Val	His	Thr	Val	Asp	Gly	Thr	Ala
	530					535					540				
Met	Leu	Val	Thr	Pro	Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu	His	Pro
545					550					555					560
Val	Leu	Glu	Lys	Leu	Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp	Lys	Leu
			565						570					575	
Val	Gln	Arg	Ala	Phe	Glu	Lys	Gln	Gly	Leu	His	Arg	Lys	Thr	Ser	Lys
			580					585						590	
Asn	Leu	Asn	Ile	Trp	Thr	Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys	Thr	Lys
		595					600					605			
Glu	Leu	Lys	Ala	Tyr	Leu	Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe	Pro	Glu
	610					615					620				
Gln	Pro	Leu	Asp	Asn	Pro	Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala	Glu	Gly
625					630					635					640
Gly	Val	Glu													

<210> 200

<211> 639

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 200

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			20					25					30		
Glu	Leu	Leu	Gly	Thr	Pro	Arg	Arg	Arg	Gln	Leu	Leu	Glu	Asn	Ile	Trp
		35					40					45			
Gln	Arg	Ala	Ser	Leu	Ser	Lys	Gln	Gln	Phe	Glu	Glu	Ile	Tyr	Arg	Arg
	50					55					60				
Pro	Leu	Ala	Asn	Tyr	Ala	Glu	Leu	Val	Gln	Gln	Leu	Pro	Ala	Ser	Glu
65					70					75					80
Asn	His	His	His	Ala	His	Pro	Gly	Gly	Met	Ile	Asp	His	Gly	Leu	Glu
			85						90					95	
Ile	Val	Ala	Tyr	Ala	Leu	Lys	Val	Arg	Gln	Thr	Tyr	Leu	Leu	Pro	Ile
		100						105					110		
Gly	Ala	Ala	Pro	Glu	Ser	Gln	Ser	Ala	Gln	Ala	Glu	Ala	Trp	Ser	Ala
		115					120					125			
Ala	Ala	Ala	Tyr	Gly	Ala	Leu	Ala	His	Asp	Ile	Gly	Lys	Ile	Val	Val
		130				135					140				
Asp	Leu	Gln	Val	Glu	Leu	Gln	Asp	Gly	Ser	Thr	Trp	His	Pro	Trp	Asn
145					150					155					160
Gly	Pro	Ile	Asn	Gln	Pro	Tyr	Arg	Phe	Lys	Tyr	Val	Lys	Ser	Arg	Glu
			165					170						175	
Tyr	Gln	Leu	His	Gly	Ala	Ala	Ser	Ala	Leu	Leu	Ile	His	Gln	Leu	Leu
		180						185					190		
Pro	Arg	Thr	Ala	Leu	Asp	Trp	Leu	Ser	Arg	Phe	Pro	Glu	Leu	Trp	Ala
		195					200					205			
Gln	Leu	Ile	Tyr	Leu	Phe	Ala	Gly	Gln	Tyr	Glu	His	Ala	Gly	Ile	Leu
	210					215					220				
Gly	Glu	Ile	Ile	Val	Lys	Ala	Asp	Gln	Ala	Ser	Val	Ala	Gln	Glu	Leu
225					230					235					240
Gly	Gly	Asn	Pro	Asp	Arg	Ala	Leu	Ala	Ala	Pro	Lys	Gln	Ser	Leu	Gln
				245					250					255	

Arg	Gln	Leu	Ala	Asp	Gly	Leu	Arg	Phe	Leu	Val	Lys	Asp	Lys	Phe	Lys
			260					265					270		
Leu	Asn	Gln	Pro	Ser	Gly	Pro	Ser	Asp	Gly	Trp	Leu	Thr	Gln	Asp	Ala
		275					280					285			
Leu	Trp	Leu	Val	Ser	Lys	Pro	Ala	Ala	Asp	Gln	Leu	Arg	Ala	Tyr	Leu
	290					295					300				
Leu	Ala	Gln	Gly	Ile	Asp	Gly	Val	Pro	Ser	Ser	Asn	Ala	Pro	Phe	Phe
305					310					315					320
Ser	Met	Leu	Gln	Asp	Gln	Ala	Val	Ile	Gln	Thr	Asn	Ala	Glu	Asp	Lys
			325						330					335	
Ala	Ile	Trp	Thr	Ala	Thr	Val	Asp	Asn	Gly	Ala	Gly	Trp	Arg	Asn	Lys
			340					345					350		
Phe	Thr	Leu	Leu	Lys	Ile	Ala	Pro	Ala	Leu	Ile	Trp	Thr	Asp	Ala	Ala
		355					360					365			
Glu	Arg	Pro	Ser	Pro	Tyr	Ser	Gly	Ser	Leu	Val	Val	Glu	Asp	Gly	Thr
	370					375					380				
Ala	Ser	Thr	Glu	Lys	Pro	Glu	Thr	Thr	Cys	Glu	Ile	Pro	Asn	Gly	Pro
385					390					395					400
Ala	Glu	Gln	Gln	Gln	Ala	Pro	Glu	Thr	Lys	Met	Met	Leu	His	Gln	Pro
			405						410					415	
Ala	Pro	Ser	Val	Ala	Lys	Pro	Ala	Asn	Glu	Thr	Gln	Ala	Ile	Ala	Lys
			420					425					430		
Pro	Ser	Thr	Asp	Asp	Gln	Glu	Glu	Thr	Asp	Asp	Leu	Tyr	Ala	Leu	Leu
		435					440					445			
Gly	Asn	Ile	Asn	Ser	Pro	Leu	Glu	Glu	Leu	Asp	Thr	Ser	His	Asp	Ser
	450					455					460				
Pro	Ala	Ala	Ser	Pro	Thr	Asn	Thr	Arg	Gly	Glu	Glu	Asn	Leu	Gln	Gln
465					470					475					480
Pro	Leu	Gly	Thr	Lys	Glu	Pro	Thr	Asp	Cys	Ala	Pro	Glu	Ala	Ile	Glu
			485						490					495	
Asp	Val	Phe	Met	Pro	Ser	Arg	Ser	Thr	Asp	Leu	Gly	Gln	Gly	Phe	Val
		500						505					510		
Gly	Trp	Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg	Arg	Leu	Phe	Ile	Asn	Asp
	515						520					525			
Thr	Lys	Ala	Leu	Val	His	Thr	Val	Asp	Gly	Thr	Ala	Met	Leu	Val	Thr
	530					535					540				
Pro	Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu	His	Pro	Val	Leu	Glu	Lys
545					550					555					560
Leu	Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp	Lys	Leu	Val	Gln	Arg	Ala
			565						570					575	
Phe	Glu	Lys	Gln	Gly	Leu	His	Arg	Lys	Thr	Ser	Lys	Asn	Leu	Asn	Ile
		580						585					590		
Trp	Thr	Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys	Thr	Lys	Glu	Leu	Lys	Ala
	595						600					605			
Tyr	Leu	Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe	Pro	Glu	Gln	Pro	Leu	Asp
	610					615					620				
Asn	Pro	Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala	Glu	Gly	Gly	Val	Glu	
625					630					635					

<210> 201

<211> 608

<212> PRT

<213> Pseudomonas aeruginosa

<400> 201

Met	Glu	Leu	Leu	Gly	Thr	Pro	Arg	Arg	Arg	Gln	Leu	Leu	Glu	Asn	Ile
1				5					10					15	
Trp	Gln	Arg	Ala	Ser	Leu	Ser	Lys	Gln	Gln	Phe	Glu	Glu	Ile	Tyr	Arg



Asp Thr Lys Ala Leu Val His Thr Val Asp Gly Thr Ala Met Leu Val  
                   500                  505                  510  
 Thr Pro Gly Ile Phe Lys Arg Tyr Val Gln Glu His Pro Val Leu Glu  
                   515                  520                  525  
 Lys Leu Ala Gln Ala Lys Glu Thr Thr Gly Trp Lys Leu Val Gln Arg  
                   530                  535                  540  
 Ala Phe Glu Lys Gln Gly Leu His Arg Lys Thr Ser Lys Asn Leu Asn  
 545                  550                  555                  560  
 Ile Trp Thr Ile Lys Val Ser Gly Pro Arg Lys Thr Lys Glu Leu Lys  
                   565                  570                  575  
 Ala Tyr Leu Leu Gln Asp Pro Lys Leu Leu Phe Pro Glu Gln Pro Leu  
                   580                  585                  590  
 Asp Asn Pro Ser Leu Thr Val Ile Thr Asp Ala Glu Gly Gly Val Glu  
                   595                  600                  605

<210> 202  
 <211> 550  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 202  
 Met Ile Asp His Gly Leu Glu Ile Val Ala Tyr Ala Leu Lys Val Arg  
 1                  5                  10                  15  
 Gln Thr Tyr Leu Leu Pro Ile Gly Ala Ala Pro Glu Ser Gln Ser Ala  
                   20                  25                  30  
 Gln Ala Glu Ala Trp Ser Ala Ala Ala Tyr Gly Ala Leu Ala His  
                   35                  40                  45  
 Asp Ile Gly Lys Ile Val Val Asp Leu Gln Val Glu Leu Gln Asp Gly  
 50                  55                  60  
 Ser Thr Trp His Pro Trp Asn Gly Pro Ile Asn Gln Pro Tyr Arg Phe  
 65                  70                  75                  80  
 Lys Tyr Val Lys Ser Arg Glu Tyr Gln Leu His Gly Ala Ala Ser Ala  
                   85                  90                  95  
 Leu Leu Ile His Gln Leu Leu Pro Arg Thr Ala Leu Asp Trp Leu Ser  
                   100                  105                  110  
 Arg Phe Pro Glu Leu Trp Ala Gln Leu Ile Tyr Leu Phe Ala Gly Gln  
                   115                  120                  125  
 Tyr Glu His Ala Gly Ile Leu Gly Glu Ile Ile Val Lys Ala Asp Gln  
                   130                  135                  140  
 Ala Ser Val Ala Gln Glu Leu Gly Gly Asn Pro Asp Arg Ala Leu Ala  
 145                  150                  155                  160  
 Ala Pro Lys Gln Ser Leu Gln Arg Gln Leu Ala Asp Gly Leu Arg Phe  
                   165                  170                  175  
 Leu Val Lys Asp Lys Phe Lys Leu Asn Gln Pro Ser Gly Pro Ser Asp  
                   180                  185                  190  
 Gly Trp Leu Thr Gln Asp Ala Leu Trp Leu Val Ser Lys Pro Ala Ala  
                   195                  200                  205  
 Asp Gln Leu Arg Ala Tyr Leu Leu Ala Gln Gly Ile Asp Gly Val Pro  
                   210                  215                  220  
 Ser Ser Asn Ala Pro Phe Ser Met Leu Gln Asp Gln Ala Val Ile  
 225                  230                  235                  240  
 Gln Thr Asn Ala Glu Asp Lys Ala Ile Trp Thr Ala Thr Val Asp Asn  
                   245                  250                  255  
 Gly Ala Gly Trp Arg Asn Lys Phe Thr Leu Leu Lys Ile Ala Pro Ala  
                   260                  265                  270  
 Leu Ile Trp Thr Asp Ala Ala Glu Arg Pro Ser Pro Tyr Ser Gly Ser  
                   275                  280                  285  
 Leu Val Val Glu Asp Gly Thr Ala Ser Thr Glu Lys Pro Glu Thr Thr

290		295		300
Cys Glu Ile Pro Asn Gly	Pro Ala Glu Gln Gln	Gln Ala Pro Glu Thr		
305	310	315		320
Lys Met Met Leu His Gln	Pro Ala Pro Ser Val	Ala Lys Pro Ala Asn		
	325	330		335
Glu Thr Gln Ala Ile Ala	Lys Pro Ser Thr Asp	Asp Gln Glu Glu Thr		
	340	345		350
Asp Asp Leu Tyr Ala Leu	Leu Gly Asn Ile Asn	Ser Pro Leu Glu Glu		
	355	360		365
Leu Asp Thr Ser His Asp	Ser Pro Ala Ala Ser	Pro Thr Asn Thr Arg		
	370	375		380
Gly Glu Glu Asn Leu Gln	Pro Leu Gly Thr Lys	Glu Pro Thr Asp		
385	390	395		400
Cys Ala Pro Glu Ala Ile	Glu Asp Val Phe Met	Pro Ser Arg Ser Thr		
	405	410		415
Asp Leu Gly Gln Gly Phe	Val Gly Trp Met Lys	Ser Gly Ile Ala Ala		
	420	425		430
Arg Arg Leu Phe Ile Asn	Asp Thr Lys Ala Leu	Val His Thr Val Asp		
	435	440		445
Gly Thr Ala Met Leu Val	Thr Pro Gly Ile Phe	Lys Arg Tyr Val Gln		
	450	455		460
Glu His Pro Val Leu Glu	Lys Leu Ala Gln Ala	Lys Glu Thr Thr Gly		
465	470	475		480
Trp Lys Leu Val Gln Arg	Ala Phe Glu Lys Gln	Gly Leu His Arg Lys		
	485	490		495
Thr Ser Lys Asn Leu Asn	Ile Trp Thr Ile Lys	Val Ser Gly Pro Arg		
	500	505		510
Lys Thr Lys Glu Leu Lys	Ala Tyr Leu Leu Gln	Asp Pro Lys Leu Leu		
	515	520		525
Phe Pro Glu Gln Pro Leu	Asp Asn Pro Ser Leu	Thr Val Ile Thr Asp		
	530	535		540
Ala Glu Gly Gly Val Glu				
545	550			

<210> 203  
 <211> 318  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 203
Met Leu Gln Asp Gln Ala Val Ile Gln Thr Asn Ala Glu Asp Lys Ala
1 5 10 15
Ile Trp Thr Ala Thr Val Asp Asn Gly Ala Gly Trp Arg Asn Lys Phe
20 25 30
Thr Leu Leu Lys Ile Ala Pro Ala Leu Ile Trp Thr Asp Ala Ala Glu
35 40 45
Arg Pro Ser Pro Tyr Ser Gly Ser Leu Val Val Glu Asp Gly Thr Ala
50 55 60
Ser Thr Glu Lys Pro Glu Thr Thr Cys Glu Ile Pro Asn Gly Pro Ala
65 70 75 80
Glu Gln Gln Gln Ala Pro Glu Thr Lys Met Met Leu His Gln Pro Ala
85 90 95
Pro Ser Val Ala Lys Pro Ala Asn Glu Thr Gln Ala Ile Ala Lys Pro
100 105 110
Ser Thr Asp Asp Gln Glu Glu Thr Asp Asp Leu Tyr Ala Leu Leu Gly
115 120 125
Asn Ile Asn Ser Pro Leu Glu Leu Asp Thr Ser His Asp Ser Pro
130 135 140

Ala	Ala	Ser	Pro	Thr	Asn	Thr	Arg	Gly	Glu	Glu	Asn	Leu	Gln	Gln	Pro
145					150					155					160
Leu	Gly	Thr	Lys	Glu	Pro	Thr	Asp	Cys	Ala	Pro	Glu	Ala	Ile	Glu	Asp
				165					170					175	
Val	Phe	Met	Pro	Ser	Arg	Ser	Thr	Asp	Leu	Gly	Gln	Gly	Phe	Val	Gly
			180					185					190		
Trp	Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg	Arg	Leu	Phe	Ile	Asn	Asp	Thr
		195					200					205			
Lys	Ala	Leu	Val	His	Thr	Val	Asp	Gly	Thr	Ala	Met	Leu	Val	Thr	Pro
	210					215					220				
Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu	His	Pro	Val	Leu	Glu	Lys	Leu
225					230					235					240
Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp	Lys	Leu	Val	Gln	Arg	Ala	Phe
				245					250					255	
Glu	Lys	Gln	Gly	Leu	His	Arg	Lys	Thr	Ser	Lys	Asn	Leu	Asn	Ile	Trp
			260					265					270		
Thr	Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys	Thr	Lys	Glu	Leu	Lys	Ala	Tyr
		275					280					285			
Leu	Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe	Pro	Glu	Gln	Pro	Leu	Asp	Asn
	290					295					300				
Pro	Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala	Glu	Gly	Gly	Val	Glu		
305					310					315					

<210> 204

<211> 229

<212> PRT

<213> Pseudomonas aeruginosa

<400> 204

Met	Met	Leu	His	Gln	Pro	Ala	Pro	Ser	Val	Ala	Lys	Pro	Ala	Asn	Glu
1				5					10					15	
Thr	Gln	Ala	Ile	Ala	Lys	Pro	Ser	Thr	Asp	Asp	Gln	Glu	Glu	Thr	Asp
			20					25					30		
Asp	Leu	Tyr	Ala	Leu	Leu	Gly	Asn	Ile	Asn	Ser	Pro	Leu	Glu	Glu	Leu
	35						40					45			
Asp	Thr	Ser	His	Asp	Ser	Pro	Ala	Ala	Ser	Pro	Thr	Asn	Thr	Arg	Gly
	50					55					60				
Glu	Glu	Asn	Leu	Gln	Gln	Pro	Leu	Gly	Thr	Lys	Glu	Pro	Thr	Asp	Cys
65					70					75					80
Ala	Pro	Glu	Ala	Ile	Glu	Asp	Val	Phe	Met	Pro	Ser	Arg	Ser	Thr	Asp
				85					90					95	
Leu	Gly	Gln	Gly	Phe	Val	Gly	Trp	Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg
		100						105					110		
Arg	Leu	Phe	Ile	Asn	Asp	Thr	Lys	Ala	Leu	Val	His	Thr	Val	Asp	Gly
		115					120					125			
Thr	Ala	Met	Leu	Val	Thr	Pro	Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu
	130					135					140				
His	Pro	Val	Leu	Glu	Lys	Leu	Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp
145					150					155					160
Lys	Leu	Val	Gln	Arg	Ala	Phe	Glu	Lys	Gln	Gly	Leu	His	Arg	Lys	Thr
			165						170					175	
Ser	Lys	Asn	Leu	Asn	Ile	Trp	Thr	Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys
		180						185					190		
Thr	Lys	Glu	Leu	Lys	Ala	Tyr	Leu	Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe
	195						200					205			
Pro	Glu	Gln	Pro	Leu	Asp	Asn	Pro	Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala
	210					215						220			
Glu	Gly	Gly	Val	Glu											

225

<210> 205  
 <211> 228  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 205  
 Met Leu His Gln Pro Ala Pro Ser Val Ala Lys Pro Ala Asn Glu Thr  
 1 5 10 15  
 Gln Ala Ile Ala Lys Pro Ser Thr Asp Asp Gln Glu Glu Thr Asp Asp  
 20 25 30  
 Leu Tyr Ala Leu Leu Gly Asn Ile Asn Ser Pro Leu Glu Glu Leu Asp  
 35 40 45  
 Thr Ser His Asp Ser Pro Ala Ala Ser Pro Thr Asn Thr Arg Gly Glu  
 50 55 60  
 Glu Asn Leu Gln Gln Pro Leu Gly Thr Lys Glu Pro Thr Asp Cys Ala  
 65 70 75 80  
 Pro Glu Ala Ile Glu Asp Val Phe Met Pro Ser Arg Ser Thr Asp Leu  
 85 90 95  
 Gly Gln Gly Phe Val Gly Trp Met Lys Ser Gly Ile Ala Ala Arg Arg  
 100 105 110  
 Leu Phe Ile Asn Asp Thr Lys Ala Leu Val His Thr Val Asp Gly Thr  
 115 120 125  
 Ala Met Leu Val Thr Pro Gly Ile Phe Lys Arg Tyr Val Gln Glu His  
 130 135 140  
 Pro Val Leu Glu Lys Leu Ala Gln Ala Lys Glu Thr Thr Gly Trp Lys  
 145 150 155 160  
 Leu Val Gln Arg Ala Phe Glu Lys Gln Gly Leu His Arg Lys Thr Ser  
 165 170 175  
 Lys Asn Leu Asn Ile Trp Thr Ile Lys Val Ser Gly Pro Arg Lys Thr  
 180 185 190  
 Lys Glu Leu Lys Ala Tyr Leu Leu Gln Asp Pro Lys Leu Leu Phe Pro  
 195 200 205  
 Glu Gln Pro Leu Asp Asn Pro Ser Leu Thr Val Ile Thr Asp Ala Glu  
 210 215 220  
 Gly Gly Val Glu  
 225

<210> 206  
 <211> 140  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 206  
 Met Pro Ser Arg Ser Thr Asp Leu Gly Gln Gly Phe Val Gly Trp Met  
 1 5 10 15  
 Lys Ser Gly Ile Ala Ala Arg Arg Leu Phe Ile Asn Asp Thr Lys Ala  
 20 25 30  
 Leu Val His Thr Val Asp Gly Thr Ala Met Leu Val Thr Pro Gly Ile  
 35 40 45  
 Phe Lys Arg Tyr Val Gln Glu His Pro Val Leu Glu Lys Leu Ala Gln  
 50 55 60  
 Ala Lys Glu Thr Thr Gly Trp Lys Leu Val Gln Arg Ala Phe Glu Lys  
 65 70 75 80  
 Gln Gly Leu His Arg Lys Thr Ser Lys Asn Leu Asn Ile Trp Thr Ile  
 85 90 95

Lys	Val	Ser	Gly	Pro	Arg	Lys	Thr	Lys	Glu	Leu	Lys	Ala	Tyr	Leu	Leu
			100					105					110		
Gln	Asp	Pro	Lys	Leu	Leu	Phe	Pro	Glu	Gln	Pro	Leu	Asp	Asn	Pro	Ser
		115					120					125			
Leu	Thr	Val	Ile	Thr	Asp	Ala	Glu	Gly	Gly	Val	Glu				
	130					135					140				

<210> 207  
 <211> 125  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 207															
Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg	Arg	Leu	Phe	Ile	Asn	Asp	Thr	Lys
1				5					10					15	
Ala	Leu	Val	His	Thr	Val	Asp	Gly	Thr	Ala	Met	Leu	Val	Thr	Pro	Gly
			20					25					30		
Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu	His	Pro	Val	Leu	Glu	Lys	Leu	Ala
		35					40					45			
Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp	Lys	Leu	Val	Gln	Arg	Ala	Phe	Glu
	50					55					60				
Lys	Gln	Gly	Leu	His	Arg	Lys	Thr	Ser	Lys	Asn	Leu	Asn	Ile	Trp	Thr
65					70					75					80
Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys	Thr	Lys	Glu	Leu	Lys	Ala	Tyr	Leu
			85						90					95	
Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe	Pro	Glu	Gln	Pro	Leu	Asp	Asn	Pro
			100					105					110		
Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala	Glu	Gly	Gly	Val	Glu			
		115					120					125			

<210> 208  
 <211> 99  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 208															
Met	Leu	Val	Thr	Pro	Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu	His	Pro
1				5					10					15	
Val	Leu	Glu	Lys	Leu	Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp	Lys	Leu
			20					25					30		
Val	Gln	Arg	Ala	Phe	Glu	Lys	Gln	Gly	Leu	His	Arg	Lys	Thr	Ser	Lys
		35					40					45			
Asn	Leu	Asn	Ile	Trp	Thr	Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys	Thr	Lys
	50					55					60				
Glu	Leu	Lys	Ala	Tyr	Leu	Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe	Pro	Glu
65					70					75					80
Gln	Pro	Leu	Asp	Asn	Pro	Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala	Glu	Gly
				85					90					95	
Gly	Val	Glu													

<210> 209  
 <211> 252  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 209

Met	Arg	Arg	Asp	Ala	Pro	Ser	Asp	Ala	Gly	Phe	His	Gln	Thr	Gln	His
1				5					10					15	
Val	Val	Glu	Val	Phe	His	Glu	Glu	His	Leu	Val	Ala	Asp	Arg	Pro	Gln
			20					25					30		
Gln	Val	Arg	Met	Leu	Pro	Gly	Ala	Ala	Ala	Glu	Ala	Asp	Leu	Pro	Val
		35					40					45			
Ile	Gly	Gln	Ala	Arg	Asp	Ala	Val	Gln	Gly	Gly	Ile	Ala	Gln	Arg	Val
	50					55					60				
Leu	Arg	Met	Gly	Asp	Asp	Glu	Arg	Leu	Gly	Val	Ala	Glu	His	Ala	Leu
65					70					75					80
Val	Glu	Ala	Gly	Asp	Leu	Gln	Phe	Leu	Val	Asp	Gly	Asp	Gly	Asp	Ile
				85					90					95	
Asp	Phe	Arg	Val	Val	Leu	Leu	Asp	Arg	Arg	Gln	Ala	Ile	Gly	Gly	Arg
			100					105					110		
Gly	Ala	Tyr	Gln	Ala	Asp	His	Val	Glu	Ile	Val	Glu	Gln	Tyr	Ala	Ala
		115					120					125			
His	Arg	Ile	Ala	Glu	Arg	Arg	Arg	Asp	Gly	Gly	Val	Gln	Gln	His	Pro
	130					135					140				
Glu	Ile	Ala	Arg	Thr	Leu	Val	Glu	Ile	Glu	Gly	Asp	Val	Ala	Asp	Gln
145					150					155					160
Leu	Leu	Val	Val	Gln	Gln	Ala	Ala	His	Val	Arg	Asp	Gln	Ala	Lys	Arg
				165					170					175	
Leu	Leu	Gly	Gly	Phe	Asp	Leu	Val	Ala	Val	Pro	Thr	Asp	Gln	Leu	His
			180					185					190		
Ala	Gln	Val	Asp	Phe	Gln	Val	Ala	Asp	Arg	Arg	Ala	Asp	Arg	Gly	Val
		195					200					205			
Arg	Leu	Ala	Gln	Asp	Pro	Arg	Ser	Gly	Gly	Asn	Arg	Thr	Gly	Gly	Asp
	210					215					220				
Asp	Leu	Glu	Glu	His	Val	His	Val	Ile	Gln	Val	Met	Asn	Arg	His	Pro
225					230					235					240
Leu	Phe	Leu	Leu	Leu	Gly	Gly	Ala	Cys	Arg	Phe	Pro				
				245					250						

<210> 210  
 <211> 624  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 210

gctacccgaa	ccccagcgct	ggaatcctca	gccagcgaca	gcgtcttttg	ctccgcccgtg	60
acttcccaga	gctctgccat	cgaccgcttc	ttcgggatcc	agctgatgag	ggtttggttg	120
gacgtgacgg	caccttccac	gtgtgcatgg	cagggtctgc	cacgcttctt	ggacttcttc	180
ttgccactcg	gttctgcttc	gtcgtcgtct	tcaagctcga	agggcttcag	gtcgtcgtcc	240
tcgtcctcgt	catctccgtc	aacggcgccc	tcagcgcttg	cgccttgccg	ggcggccttc	300
tcggcgctcg	tcttgaccgt	cacgctgtcc	agatccgtga	tgaccagtgt	tgtgagccca	360
acgaaggcga	tcagctcctg	gaaccgatgc	gcgaacgcac	caccgacttc	aaggatggtt	420
agggcggaag	aacgcaggcg	cttggccacc	aactcgatca	ttgcaggcag	gagcagacgc	480
tcgacgttgc	cttccaccaa	tatcacgcgc	tcggaaaaaa	agagatcgca	gtgcgtcagc	540
ttcagatacc	gctgcaggaa	ttcgcgcgct	ggagcgtcgc	acgcgcccgt	tttgaatagc	600
gacagattgc	gcacatccgt	gtga				624

<210> 211  
 <211> 207  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 211

Ala	Thr	Arg	Thr	Pro	Ala	Leu	Glu	Ser	Ser	Ala	Ser	Asp	Ser	Val	Phe
1				5					10					15	
Cys	Ser	Ala	Val	Thr	Ser	Gln	Ser	Ser	Ala	Ile	Asp	Arg	Phe	Phe	Gly
			20					25					30		
Ile	Gln	Leu	Met	Arg	Val	Trp	Leu	Asp	Val	Thr	Ala	Pro	Ser	Thr	Cys
		35					40					45			
Ala	Trp	Gln	Val	Leu	Pro	Arg	Phe	Leu	Asp	Phe	Phe	Leu	Pro	Leu	Gly
	50					55				60					
Ser	Ala	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Lys	Gly	Phe	Arg	Ser	Ser	Ser
65				70						75					80
Ser	Ser	Ser	Ser	Ser	Pro	Ser	Thr	Ala	Pro	Ser	Ala	Pro	Ala	Pro	Cys
				85				90						95	
Ala	Ala	Ala	Phe	Ser	Ala	Ser	Val	Leu	Thr	Val	Thr	Leu	Ser	Arg	Ser
			100					105					110		
Val	Met	Thr	Ser	Val	Val	Ser	Pro	Thr	Lys	Ala	Ile	Ser	Ser	Trp	Asn
	115						120					125			
Arg	Cys	Ala	Asn	Ala	Pro	Pro	Thr	Ser	Arg	Met	Val	Arg	Ala	Glu	Glu
	130					135					140				
Arg	Arg	Arg	Leu	Ala	Thr	Asn	Ser	Ile	Ile	Ala	Gly	Arg	Ser	Arg	Arg
145					150					155					160
Ser	Thr	Leu	Pro	Ser	Thr	Asn	Ile	Thr	Ala	Ser	Glu	Lys	Lys	Arg	Ser
			165					170						175	
Gln	Cys	Val	Ser	Phe	Arg	Tyr	Arg	Cys	Arg	Asn	Ser	Arg	Ala	Gly	Ala
		180						185				190			
Ser	Asp	Ala	Pro	Val	Leu	Asn	Ser	Asp	Arg	Leu	Arg	Thr	Ser	Val	
		195					200					205			

<210> 212  
 <211> 462  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 212	
tgtcgtcgca	cccaccgtca ccgaaacctt ggtctggttaa gctacccgaa cccagcgct 60
ggaatcctca	gccagcgaca gcgtcttttg ctccgccgtg acttcccaga gctctgccat 120
cgaccgcttc	ttcgggatcc agctgatgag ggtttggttg gacgtgacgg caccttccac 180
gtgtgcatgg	caggtgctgc cacgcttctt ggacttcttc ttgccactcg gttctgcttc 240
gtcgtcgtct	tcaagctcga agggcttcag gtcgtcgtcc tcgtcctcgt catctccgtc 300
aacggcgccc	tcagcgcttg cgccttgccg ggccggccttc tcggcgctccg tcttgaccgt 360
cacgctgtcc	agatccgtga tgaccagtgt tgtgagccca acgaaggcga tcagctcctg 420
gaaccgatgc	gcgaacgcac caccgacttc aaggatggtt ag 462

<210> 213  
 <211> 153  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 213															
Cys	Arg	Arg	Thr	His	Arg	His	Arg	Asn	Leu	Gly	Leu	Val	Ser	Tyr	Pro
1				5					10					15	
Asn	Pro	Ser	Ala	Gly	Ile	Leu	Ser	Gln	Arg	Gln	Arg	Leu	Leu	Leu	Arg
			20					25				30			
Arg	Asp	Phe	Pro	Glu	Leu	Cys	His	Arg	Pro	Leu	Leu	Arg	Asp	Pro	Ala
		35					40					45			
Asp	Glu	Gly	Leu	Val	Gly	Arg	Asp	Gly	Thr	Phe	His	Val	Cys	Met	Ala
	50					55				60					
Gly	Ala	Ala	Thr	Leu	Leu	Gly	Leu	Leu	Leu	Ala	Thr	Arg	Phe	Cys	Phe
65					70					75				80	

Val Val Val Phe Lys Leu Glu Gly Leu Gln Val Val Val Leu Val Leu  
85 90 95  
Val Ile Ser Val Asn Gly Ala Leu Ser Ala Cys Ala Leu Arg Gly Gly  
100 105 110  
Leu Leu Gly Val Arg Leu Asp Arg His Ala Val Gln Ile Arg Asp Asp  
115 120 125  
Gln Cys Cys Glu Pro Asn Glu Gly Asp Gln Leu Leu Glu Pro Met Arg  
130 135 140  
Glu Arg Thr Thr Asp Phe Lys Asp Gly  
145 150

<210> 214  
<211> 972  
<212> DNA  
<213> *Pseudomonas aeruginosa*

<400> 214  
caggaagtcg gcgagctgaa ggatgtcctc gtggccaagt atgcccttgg cgtagtcact 60  
gccacgccc tagttgaacg tcctgacgcc ggccacagcc tccaggcttc ggacatatcg 120  
ctcttggtcg gccttggtcc tgtcgcgcgt ggtctgccgg acacgcgagc tgtaattctc 180  
gaactcttct tcaagtctcg agatccgcct gcggatgtcg ttctgcagcc aaaccttgat 240  
gtcggccttg aacgtctttg caatagacca gtaaaagctg tggatggtcg agacatgaac 300  
cagcgggtca tcgttgacgt ccgccaggat ttcattggtg gcaaggctcg tatacgtgat 360  
gcacgcgact atctgcttcc tcgcccgcac gctggcgccg tgctccgaga tcacccagtc 420  
cagcgccttg atgagggagg tggctcttgcc ggaacctgcg ccagcacgaa ccacgaaggg 480  
ctgcgagggc gtcgctacaa tgcattgcgt gatctcgccg tcggcgctcg tatctgggct 540  
atcaattcgt ctgctcatgc cgtctgcccc gggtaacaa tgatagcgac aacatcggct 600  
gtagtcgggt caatagtcgc gacctcggcg gcgatggcag catccgcctc aagctcgtgg 660  
gccacttttg cttcgagcca ggccaagccc tcggcgatgt acgcgggaac cttccagcca 720  
ttgagcggcc cgcttgcgag tacctccagc gcaaagcggg tcttgctgaa gttcttgccg 780  
accaccctat cgtgtaactt ctcagccagc tcttcaggcg tgctcgggtg gcgcttgagc 840  
ttgaggccga ccgaccggtt tgcctcagcc tggcaccagt ccgcgttctc aagaccaaag 900  
gcctcctcaa gtgtgcggcc gcagagctgt gatgtcgtcg caccacccgt caccgaaacc 960  
ttggtctggt aa 972

<210> 215  
<211> 323  
<212> PRT  
<213> *Pseudomonas aeruginosa*

<400> 215  
Gln Glu Val Gly Glu Leu Lys Asp Val Leu Val Ala Lys Tyr Ala Leu  
1 5 10 15  
Gly Val Val Thr Ala His Ala Val Val Glu Arg Pro Asp Ala Gly His  
20 25 30  
Ser Leu Gln Ala Ser Asp Ile Ser Leu Leu Val Gly Leu Val Pro Val  
35 40 45  
Ala Arg Gly Leu Pro Asp Thr Arg Ala Val Ile Leu Glu Leu Phe Phe  
50 55 60  
Lys Phe Gly Asp Pro Pro Ala Asp Val Val Leu Gln Pro Asn Leu Asp  
65 70 75 80  
Val Gly Leu Glu Arg Leu Cys Asn Arg Pro Val Lys Ala Val Asp Gly  
85 90 95  
Arg Asp Met Asn Gln Arg Val Ile Val Asp Val Arg Gln Asp Phe Ile  
100 105 110  
Gly Gly Lys Val Gly Ile Arg Asp Ala Arg Asp Tyr Leu Leu Pro Arg  
115 120 125  
Pro His Ala Gly Ala Val Leu Arg Asp His Pro Val Gln Arg Leu Asp



Pro Thr Ser Leu Arg Arg Met Leu Pro Ser Pro Pro Arg Ser Arg Leu  
 100 105 110  
 Leu Ser Arg Leu Gln Pro Met Leu Ser Leu Ser Leu Leu Thr Arg Gly  
 115 120 125  
 Arg Arg His Glu Gln Thr Asn  
 130 135

<210> 218  
 <211> 363  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 218  
 gggagggtggt cttgccggaa cctgcgccag cacgaaccac gaagggctgc ggaggcgctcg 60  
 ctacaatgca tgcgtggatc tcgcggtcg cgtcgggtatc tgggctatca attcgtctgc 120  
 tcatgccgtc tgccccgggt caacaatgat agcgacaaca tcggctgtag tcgggtcaat 180  
 agtcgcgacc tcggtggcga tggcagcatc cgcctcaagc tcgtgggcca ctttggcttc 240  
 gagccaggcc aagccctcgg cgatgtacgc gggaaccttc cagccattga gcggcccgcg 300  
 tgcgagtacc tccagcgcaa agcgggtcct gtcgaagtgc ttgccgacca ccctatcggtg 360  
 taa 363

<210> 219  
 <211> 120  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 219  
 Gly Arg Trp Ser Cys Arg Asn Leu Arg Gln His Glu Pro Arg Arg Ala  
 1 5 10 15  
 Ala Glu Ala Ser Leu Gln Cys Met Arg Gly Ser Arg Gly Arg Arg Arg  
 20 25 30  
 Tyr Leu Gly Tyr Gln Phe Val Cys Ser Cys Arg Leu Pro Arg Val Asn  
 35 40 45  
 Asn Asp Ser Asp Asn Ile Gly Cys Ser Arg Leu Asn Ser Arg Asp Leu  
 50 55 60  
 Gly Gly Asp Gly Ser Ile Arg Leu Lys Leu Val Gly His Phe Gly Phe  
 65 70 75 80  
 Glu Pro Gly Gln Ala Leu Gly Asp Val Arg Gly Asn Leu Pro Ala Ile  
 85 90 95  
 Glu Arg Pro Ala Cys Glu Tyr Leu Gln Arg Lys Ala Gly Leu Val Glu  
 100 105 110  
 Val Leu Ala Asp His Pro Ile Val  
 115 120

<210> 220  
 <211> 1947  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 220  
 cccggggcag acggcatgag cagacgaatt gatagcccag ataccgacgc cgaccgcgag 60  
 atccacgcat gcattgtagc gagcctccg cagcccttcg tggttcgtgc tggcgcaggt 120  
 tccggcaaga ccacctccct catcaaggcg ctggactggg tgatctcgga gcacggcgcc 180  
 agcatgcggg cgaggaagca gatagtcgcg tgcattcacgt ataccgacct tgccaccaat 240  
 gaaatcctgg cggacgtcaa cgatgacccg ctgggttcgtg tctcgacctt ccacagcttt 300  
 tactgggtcta ttgcaaagac gttccaggcc gacatcaagg tttggctgca gaacgacatc 360  
 cgcaggcgga tctccgaact tgaagaagag ttcgagaatt acagctcgcg tgtccggcag 420

accacgcgcg	acaggaacaa	ggccgaccaa	gagcgatatg	tccgaagcct	ggaggctgtg	480
gccggcgctca	ggacgttcaa	ctacggcgctg	ggcagtgact	acgccaaagg	catacttggc	540
cacgaggaca	tccttcagct	cgccgacttc	ctgctacaaa	accgcccgt	gttccgacgg	600
gtcgtggcgc	tgagctaccc	gttcgtgttt	atcgatgaga	gtcaggacac	gttcccgggt	660
gtagtgaagt	ctttcaagga	agtggaagcc	cagatgcagg	gcaagttctg	ccttggtttt	720
ttcggcgacc	cgatgcagtc	gatcttcatg	agaggcgag	gggacatcca	gcttgaggat	780
cattggcggg	ccatcacgaa	gccggagaac	tttcgctgcg	ccaagcagat	ccttgacgtc	840
gccaatgccg	tgcgcgcgca	gggcgatggc	atggagcaag	tccgcgggct	gcacgagagg	900
gtcgatggga	acctcaagct	ggtggagggg	tcggcccggg	tgttcgtctt	gccgaacacg	960
ctgaaccgaa	ccgaggcttt	ggcaagagtc	cgagcgtgga	gctcggcgac	gaacaacgac	1020
gaggggttga	caacccaga	catcgagtc	aagattcttg	tcatcgtgca	ccgcatggcc	1080
gcaaaccggc	ttggcttcgg	cggcatctac	tcggcgctga	acgacaagac	gtcggatgcc	1140
atgaagcaag	ggatgcagga	cggcaccggg	tggcccgttc	gaccttcct	aagttttgcg	1200
ctaccgatcg	ttgcagctgt	gaaggccggc	aatgagttcg	cggcgatgag	cctgctccgg	1260
gaattcagcc	cgcgccctggc	gcctgcggct	ctgaccggcc	gacgtgccgc	ggatgtattg	1320
cgagagctgc	acgctgctgc	gtcagggctt	gtcgccatgc	tggacgaggc	agggaccacc	1380
attggtgaca	tagctctcca	tctctgtgac	acgggtcttt	ttgagttcga	cgagcgctat	1440
gcgcgtgttc	ttgggtttgt	cagggatatt	gtgacaccg	ctcaggagcc	cgaggctgct	1500
gatgcagttc	cggccgaagg	attatccttg	gacgcgacaa	tggccaagtt	cttcaattgc	1560
tctgcgcaag	agctttggcc	ctatgaacgc	tatgtctcag	aaggctcccc	ctatgccacg	1620
cagcacggcg	tgaagggagc	gcagttcgaa	cgcgctcatg	tggtgatgga	cgaggaagaa	1680
agcgactacc	gaacgtacaa	ctacgagcgt	gtcttcgcga	gtgctgaggc	ccgcgctgca	1740
gatcgtgcac	gagcactaga	cggtgatgaa	aacacttgga	gccgaacgct	gcgactgctt	1800
tacgtctgct	gcactcgtgc	ccagcggggg	ctggtactag	cgttctttgt	cgccgaccct	1860
gcgaccaccc	tggaaaacgt	cgtggcgagc	gggatcttgc	cgcgaaagcgc	agtctttacg	1920
caggaagtgt	tagttggatg	gccatag				1947

<210> 221

<211> 648

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 221

Pro	Gly	Ala	Asp	Gly	Met	Ser	Arg	Arg	Ile	Asp	Ser	Pro	Asp	Thr	Asp
1				5					10					15	
Ala	Asp	Arg	Glu	Ile	His	Ala	Cys	Ile	Val	Ala	Thr	Pro	Pro	Gln	Pro
			20					25					30		
Phe	Val	Val	Arg	Ala	Gly	Ala	Gly	Ser	Gly	Lys	Thr	Thr	Ser	Leu	Ile
		35					40					45			
Lys	Ala	Leu	Asp	Trp	Val	Ile	Ser	Glu	His	Gly	Ala	Ser	Met	Arg	Ala
	50					55					60				
Arg	Lys	Gln	Ile	Val	Ala	Cys	Ile	Thr	Tyr	Thr	Asp	Leu	Ala	Thr	Asn
65					70					75					80
Glu	Ile	Leu	Ala	Asp	Val	Asn	Asp	Asp	Pro	Leu	Val	His	Val	Ser	Thr
				85				90						95	
Ile	His	Ser	Phe	Tyr	Trp	Ser	Ile	Ala	Lys	Thr	Phe	Gln	Ala	Asp	Ile
			100					105					110		
Lys	Val	Trp	Leu	Gln	Asn	Asp	Ile	Arg	Arg	Arg	Ile	Ser	Glu	Leu	Glu
	115						120					125			
Glu	Glu	Phe	Glu	Asn	Tyr	Ser	Ser	Arg	Val	Arg	Gln	Thr	Thr	Arg	Asp
	130					135					140				
Arg	Asn	Lys	Ala	Asp	Gln	Glu	Arg	Tyr	Val	Arg	Ser	Leu	Glu	Ala	Val
145					150					155					160
Ala	Gly	Val	Arg	Thr	Phe	Asn	Tyr	Gly	Val	Gly	Ser	Asp	Tyr	Ala	Lys
				165				170						175	
Gly	Ile	Leu	Gly	His	Glu	Asp	Ile	Leu	Gln	Leu	Ala	Asp	Phe	Leu	Leu
		180					185						190		
Gln	Asn	Arg	Pro	Leu	Phe	Arg	Arg	Val	Val	Ala	Leu	Ser	Tyr	Pro	Phe
	195						200					205			

Val	Phe	Ile	Asp	Glu	Ser	Gln	Asp	Thr	Phe	Pro	Gly	Val	Val	Lys	Ser
	210					215					220				
Phe	Lys	Glu	Val	Glu	Ala	Gln	Met	Gln	Gly	Lys	Phe	Cys	Leu	Gly	Phe
225					230					235					240
Phe	Gly	Asp	Pro	Met	Gln	Ser	Ile	Phe	Met	Arg	Gly	Ala	Gly	Asp	Ile
				245					250					255	
Gln	Leu	Glu	Asp	His	Trp	Arg	Ala	Ile	Thr	Lys	Pro	Glu	Asn	Phe	Arg
			260					265					270		
Cys	Ala	Lys	Gln	Ile	Leu	Asp	Val	Ala	Asn	Ala	Val	Arg	Ala	Gln	Gly
	275					280					285				
Asp	Gly	Met	Glu	Gln	Val	Arg	Gly	Leu	His	Glu	Arg	Val	Asp	Gly	Asn
290						295				300					
Leu	Lys	Leu	Val	Glu	Gly	Ser	Ala	Arg	Met	Phe	Val	Leu	Pro	Asn	Thr
305				310						315					320
Leu	Asn	Arg	Thr	Glu	Ala	Leu	Ala	Arg	Val	Arg	Ala	Trp	Ser	Ser	Ala
			325					330						335	
Thr	Asn	Asn	Asp	Glu	Gly	Trp	Thr	Thr	Pro	Asp	Ile	Ala	Val	Lys	Ile
			340				345						350		
Leu	Val	Ile	Val	His	Arg	Met	Ala	Ala	Asn	Arg	Leu	Gly	Phe	Gly	Gly
	355					360					365				
Ile	Tyr	Ser	Ala	Leu	Asn	Asp	Lys	Thr	Ser	Asp	Ala	Met	Lys	Gln	Gly
370					375					380					
Met	Gln	Asp	Gly	Thr	Gly	Trp	Pro	Val	Arg	Pro	Phe	Leu	Ser	Phe	Ala
385					390				395						400
Leu	Pro	Ile	Val	Ala	Ala	Val	Lys	Ala	Gly	Asn	Glu	Phe	Ala	Ala	Met
			405					410						415	
Ser	Leu	Leu	Arg	Glu	Phe	Ser	Pro	Arg	Leu	Ala	Pro	Ala	Ala	Leu	Thr
			420					425				430			
Gly	Arg	Arg	Ala	Ala	Asp	Val	Leu	Arg	Glu	Leu	His	Ala	Ala	Ala	Ser
	435					440					445				
Arg	Leu	Val	Ala	Met	Leu	Asp	Glu	Ala	Gly	Thr	Thr	Ile	Gly	Asp	Ile
450					455					460					
Ala	Leu	His	Leu	Cys	Asp	Thr	Gly	Leu	Phe	Glu	Phe	Asp	Glu	Arg	Tyr
465				470					475						480
Ala	Arg	Val	Leu	Gly	Phe	Val	Arg	Asp	Ile	Ala	Asp	Thr	Ala	Gln	Glu
			485						490					495	
Pro	Glu	Ala	Ala	Asp	Ala	Val	Pro	Ala	Glu	Gly	Leu	Ser	Leu	Asp	Ala
		500					505					510			
Thr	Met	Ala	Lys	Phe	Phe	Asn	Cys	Ser	Ala	Gln	Glu	Leu	Trp	Pro	Tyr
	515					520					525				
Glu	Arg	Tyr	Val	Ser	Glu	Gly	Ser	Pro	Tyr	Ala	Thr	Gln	His	Gly	Val
530					535					540					
Lys	Gly	Ala	Gln	Phe	Glu	Arg	Val	Met	Val	Val	Met	Asp	Glu	Glu	Glu
545					550				555						560
Ser	Asp	Tyr	Arg	Thr	Tyr	Asn	Tyr	Glu	Arg	Val	Phe	Ala	Ser	Ala	Glu
			565					570					575		
Ala	Arg	Ala	Ala	Asp	Arg	Ala	Arg	Ala	Leu	Asp	Gly	Asp	Glu	Asn	Thr
		580				585						590			
Trp	Ser	Arg	Thr	Leu	Arg	Leu	Leu	Tyr	Val	Cys	Cys	Thr	Arg	Ala	Gln
	595					600					605				
Arg	Gly	Leu	Val	Leu	Ala	Phe	Phe	Val	Ala	Asp	Pro	Ala	Thr	Thr	Leu
610					615					620					
Glu	Asn	Val	Val	Ala	Ser	Gly	Ile	Leu	Pro	Arg	Ser	Ala	Val	Phe	Thr
625				630					635						640
Gln	Glu	Val	Leu	Val	Gly	Trp	Pro								
				645											

<210> 222

<211> 408  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 222  
 tcgctgcat cacgtatacc gaccttgcca ccaatgaaat cctggcggac gtcaacgatg 60  
 acccgctggt tcatgtctcg accatccaca gcttttactg gtctattgca aagacgttcc 120  
 aggccgacat caaggtttgg ctgcagaacg acatccgcag gcggatctcc gaacttgaag 180  
 aagagttcga gaattacagc tcgctgtgcc ggcagaccac gcgcgacagg aacaaggccg 240  
 accaagagcg atatgtccga agcctggagg ctgtggccgg cgtcaggacg ttcaactacg 300  
 gcgtgggacg tgactacgcc aagggcatac ttggccacga ggacatcctt cagctcgccg 360  
 acttcctgct acaaaaccgc ccgctgttcc gacgggtcgt ggcgctga 408

<210> 223  
 <211> 135  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 223  
 Ser Arg Ala Ser Arg Ile Pro Thr Leu Pro Pro Met Lys Ser Trp Arg  
 1 5 10 15  
 Thr Ser Thr Met Thr Arg Trp Phe Met Ser Arg Pro Ser Thr Ala Phe  
 20 25 30  
 Thr Gly Leu Leu Gln Arg Arg Ser Arg Pro Thr Ser Arg Phe Gly Cys  
 35 40 45  
 Arg Thr Thr Ser Ala Gly Gly Ser Pro Asn Leu Lys Lys Ser Ser Arg  
 50 55 60  
 Ile Thr Ala Arg Val Ser Gly Arg Pro Arg Ala Thr Gly Thr Arg Pro  
 65 70 75 80  
 Thr Lys Ser Asp Met Ser Glu Ala Trp Arg Leu Trp Pro Ala Ser Gly  
 85 90 95  
 Arg Ser Thr Thr Ala Trp Ala Val Thr Thr Pro Arg Ala Tyr Leu Ala  
 100 105 110  
 Thr Arg Thr Ser Phe Ser Ser Pro Thr Ser Cys Tyr Lys Thr Ala Arg  
 115 120 125  
 Cys Ser Asp Gly Ser Trp Arg  
 130 135

<210> 224  
 <211> 615  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 224  
 gaagggtcga acgggcccaac cgggtgccgtc ctgcatecct tgcttcatgg catccgacgt 60  
 cttgtcgttc agcgccgagt agatgccgcc gaagccaagc cggtttgagg ccatgcggtg 120  
 cacgatgaca agaattctga ctgcgatgtc tgggggtgtc caaccctcgt cgttgttcgt 180  
 cgccgagctc cacgctcgga ctcttgccaa agcctcgggt cggttcagcg tggtcggcaa 240  
 gacgaacatc cgggcccagc cctccaccag cttgaggttc ccatcgacct tctcgtgcag 300  
 cccgcggact tgctccatgc catcgccctg cgcgcgacg gcattggcga cgtcaaggat 360  
 ctgcttggcg cagcgaaagt tctccggctt cgtgatggcc cgccaatgat cctcaagctg 420  
 gatgtcccct cgcctctca tgaagatcga ctgcatcggt tcgccgaaaa aaccaaggca 480  
 gaacttgccc tgcattctggg cttccacttc cttgaaagac ttactacac ccgggaacgt 540  
 gtcttgactc tcatcgataa acacgaacgg gtagctcagc gccacgacct gtcggaacag 600  
 cgggcgggtt tgtag 615

<210> 225  
 <211> 204

<212> PRT  
 <213> Pseudomonas aeruginosa

<400> 225  
 Glu Gly Ser Asn Gly Pro Thr Gly Ala Val Leu His Pro Leu Leu His  
 1 5 10 15  
 Gly Ile Arg Arg Leu Val Val Gln Arg Arg Val Asp Ala Ala Glu Ala  
 20 25 30  
 Lys Pro Val Cys Gly His Ala Val His Asp Asp Lys Asn Leu Asp Cys  
 35 40 45  
 Asp Val Trp Gly Cys Pro Thr Leu Val Val Val Arg Arg Arg Ala Pro  
 50 55 60  
 Arg Ser Asp Ser Cys Gln Ser Leu Gly Ser Val Gln Arg Val Arg Gln  
 65 70 75 80  
 Asp Glu His Pro Gly Arg Pro Leu His Gln Leu Glu Val Pro Ile Asp  
 85 90 95  
 Pro Leu Val Gln Pro Ala Asp Leu Leu His Ala Ile Ala Leu Arg Ala  
 100 105 110  
 His Gly Ile Gly Asp Val Lys Asp Leu Leu Gly Ala Ala Lys Val Leu  
 115 120 125  
 Arg Leu Arg Asp Gly Pro Pro Met Ile Leu Lys Leu Asp Val Pro Cys  
 130 135 140  
 Ala Ser His Glu Asp Arg Leu His Arg Val Ala Glu Lys Thr Lys Ala  
 145 150 155 160  
 Glu Leu Ala Leu His Leu Gly Phe His Phe Leu Glu Arg Leu His Tyr  
 165 170 175  
 Thr Arg Glu Arg Val Leu Thr Leu Ile Asp Lys His Glu Arg Val Ala  
 180 185 190  
 Gln Arg His Asp Pro Ser Glu Gln Arg Ala Val Leu  
 195 200

<210> 226  
 <211> 327  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 226  
 atgccgccga agccaagccg gtttgccggcc atgcggtgca cgatgacaag aatcttgact 60  
 gcgatgtctg gggttgtcca accctcgtcg ttgttcgtcg ccgagctcca cgctcggact 120  
 cttgccaaag cctcggttcg gttcagcgtg ttcggcaaga cgaacatccg ggccgacccc 180  
 tccaccagct tgaggttccc atcgaccctc tcgtgcagcc cgcggtactg ctccatgcca 240  
 tcgccctgcg cgcgcacggc attggcgacg tcaaggatct gcttggcgca gcgaaagtgc 300  
 tccggcttcg tgatggccc ccaatga 327

<210> 227  
 <211> 108  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 227  
 Met Pro Pro Lys Pro Ser Arg Phe Ala Ala Met Arg Cys Thr Met Thr  
 1 5 10 15  
 Arg Ile Leu Thr Ala Met Ser Gly Val Val Gln Pro Ser Ser Leu Phe  
 20 25 30  
 Val Ala Glu Leu His Ala Arg Thr Leu Ala Lys Ala Ser Val Arg Phe  
 35 40 45  
 Ser Val Phe Gly Lys Thr Asn Ile Arg Ala Asp Pro Ser Thr Ser Leu  
 50 55 60

Arg Phe Pro Ser Thr Leu Ser Cys Ser Pro Arg Thr Cys Ser Met Pro  
65 70 75 80  
Ser Pro Cys Ala Arg Thr Ala Leu Ala Thr Ser Arg Ile Cys Leu Ala  
85 90 95  
Gln Arg Lys Phe Ser Gly Phe Val Met Ala Arg Gln  
100 105

<210> 228  
<211> 399  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 228  
cgctcgccaat gccgtgcgcg cgcagggcga tggcatggag caagtccgcg ggctgcacga 60  
gagggtcgat gggaacctca agctggtgga ggggtcggcc cggatgttcg tcttgccgaa 120  
cacgctgaac cgaaccgagg ctttggcaag agtccgagcg tggagctcgg cgacgaacaa 180  
cgacgaggggt tggacaaccc cagacatcgc agtcaagatt cttgtcatcg tgcaccgcat 240  
ggccgcaaac cggcttggtc tcggcggcat ctactcggcg ctgaacgaca agacgtcgga 300  
tgccatgaag caagggatgc aggacggcac cggttggccc gttcgaccct tcctaagttt 360  
tgcgctaccg atcgttgacg ctgtgaaggc cggcaatga 399

<210> 229  
<211> 132  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 229  
Arg Arg Gln Cys Arg Ala Arg Ala Gly Arg Trp His Gly Ala Ser Pro  
1 5 10 15  
Arg Ala Ala Arg Glu Gly Arg Trp Glu Pro Gln Ala Gly Gly Gly Val  
20 25 30  
Gly Pro Asp Val Arg Leu Ala Glu His Ala Glu Pro Asn Arg Gly Phe  
35 40 45  
Gly Lys Ser Pro Ser Val Glu Leu Gly Asp Glu Gln Arg Arg Gly Leu  
50 55 60  
Asp Asn Pro Arg His Arg Ser Gln Asp Ser Cys His Arg Ala Pro His  
65 70 75 80  
Gly Arg Lys Pro Ala Trp Leu Arg Arg His Leu Leu Gly Ala Glu Arg  
85 90 95  
Gln Asp Val Gly Cys His Glu Ala Arg Asp Ala Gly Arg His Arg Leu  
100 105 110  
Ala Arg Ser Thr Leu Pro Lys Phe Cys Ala Thr Asp Arg Cys Ser Cys  
115 120 125  
Glu Gly Arg Gln  
130

<210> 230  
<211> 330  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 230  
cgctcgtcga actcaaaaag acccgtgtca cagagatgga gagctatgtc accaatgggtg 60  
gtccctgcct cgtccagcat ggcgacaagc ctcgacgcag cagcgtgcag ctctcgcaat 120  
acatccgctg cagctcggcc ggtcagagcc gcaggcgcca ggcgcggtg gaattcccgg 180  
agcaggctca tcgccgcgaa ctcattgccg gccttcacag ctgcaacgat cggtagcgca 240  
aaacttagga agggtcgaac gggccaaccg gtgccgtcct gcatcccttg cttcatggca 300

tccgacgtct tgtcgttcag cgccgagtag

330

<210> 231  
<211> 109  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 231  
Arg Ser Ser Asn Ser Lys Arg Pro Val Ser Gln Arg Trp Arg Ala Met  
1 5 10 15  
Ser Pro Met Val Val Pro Ala Ser Ser Met Ala Thr Ser Leu Asp  
20 25 30  
Ala Ala Ala Cys Ser Ser Arg Asn Thr Ser Ala Ala Arg Arg Pro Val  
35 40 45  
Arg Ala Ala Gly Ala Arg Arg Gly Leu Asn Ser Arg Ser Arg Leu Ile  
50 55 60  
Ala Ala Asn Ser Leu Pro Ala Phe Thr Ala Ala Thr Ile Gly Ser Ala  
65 70 75 80  
Lys Leu Arg Lys Gly Arg Thr Gly Gln Pro Val Pro Ser Cys Ile Pro  
85 90 95  
Cys Phe Met Ala Ser Asp Val Leu Ser Phe Ser Ala Glu  
100 105

<210> 232  
<211> 321  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 232  
tccttcggcc ggaactgcat cagcagcctc gggctcctga gcggtgtcag caatatccct 60  
gacaaaccca agaacacgcg catagcgctc gtcgaactca aaaagacccg tgtcacagag 120  
atggagagct atgtcaccaa tgggtggctcc tgcctcgctc agcatggcga caagcctcga 180  
cgcagcagcg tgcagctctc gcaatacatc cgcggcacgt cggccggtca gagccgcagg 240  
cgccaggcgc gggctgaatt cccggagcag gtcctatcgcc gcgaactcat tgccggcctt 300  
cacagctgca acgatcggta g 321

<210> 233  
<211> 106  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 233  
Ser Phe Gly Arg Asn Cys Ile Ser Ser Leu Gly Leu Leu Ser Gly Val  
1 5 10 15  
Ser Asn Ile Pro Asp Lys Pro Lys Asn Thr Arg Ile Ala Leu Val Glu  
20 25 30  
Leu Lys Lys Thr Arg Val Thr Glu Met Glu Ser Tyr Val Thr Asn Gly  
35 40 45  
Gly Pro Cys Leu Val Gln His Gly Asp Lys Pro Arg Arg Ser Ser Val  
50 55 60  
Gln Leu Ser Gln Tyr Ile Arg Gly Thr Ser Ala Gly Gln Ser Arg Arg  
65 70 75 80  
Arg Gln Ala Arg Ala Glu Phe Pro Glu Gln Ala His Arg Arg Glu Leu  
85 90 95  
Ile Ala Gly Leu His Ser Cys Asn Asp Arg  
100 105

<210> 234  
 <211> 639  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 234  
 atcgactctt tgaggaaaatg cgtgggaagc ctggaaaagt gctgtttcgc ctgcaaagaa 60  
 ataattcatg ttcattgcat tcgttgctcg cagtgcggcg agtcccaagg ctggcgaagg 120  
 ttcattgcat ctccaacctc agtagttgcg ttggtcctta gcctttttatc aatcgctgcc 180  
 acaaaacctg tggagcgatt gttagatgcc cagcgagcag agctacaaat ctccatcacg 240  
 ggtggtgatt acaaagctgc ccagcttatg ttgaccaata acgggtcaaa gcctgcaact 300  
 ttagtttctt tcgaaatcac atcgaaagcc acgaccaata cgaaaacatg gtttttggtgta 360  
 agcaatacgg atggcgaaat tctggagcca ggcaaaactt acaaaatcag ggcctcaacc 420  
 gatgagtcta tccccaaaat tctcgaaagc gagcgctcga cgattttgaa gtctcagtag 480  
 gcacttgtag ataattgcga attaacccgct aaatacatag aggccacggg gcagaagggt 540  
 gtgctgtgtc aaccgttcat gtgagacaca cctcctgaaa aggggtggcct gccccctggt 600  
 aaacctggca taccattttg gtaccttggc caagaatga 639

<210> 235  
 <211> 212  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 235  
 Ile Asp Ser Leu Arg Lys Cys Val Gly Ser Leu Glu Lys Cys Cys Phe  
 1 5 10 15  
 Ala Cys Lys Glu Ile Ile His Val His Ala Ile Arg Cys Arg Gln Cys  
 20 25 30  
 Gly Glu Ser Gln Gly Trp Arg Arg Phe Met Ser Ser Pro Thr Ser Val  
 35 40 45  
 Val Ala Leu Val Leu Ser Leu Leu Ser Ile Ala Ala Thr Lys Pro Val  
 50 55 60  
 Glu Arg Leu Phe Asp Ala Gln Arg Ala Glu Leu Gln Ile Ser Ile Thr  
 65 70 75 80  
 Gly Gly Asp Tyr Lys Ala Ala Gln Leu Met Leu Thr Asn Asn Gly Ser  
 85 90 95  
 Lys Pro Ala Thr Leu Val Ser Phe Glu Ile Thr Ser Lys Ala Thr Thr  
 100 105 110  
 Asn Thr Lys Thr Trp Phe Leu Val Ser Asn Thr Asp Gly Glu Ile Leu  
 115 120 125  
 Glu Pro Gly Lys Thr Tyr Lys Ile Arg Ala Ser Thr Asp Glu Ser Ile  
 130 135 140  
 Pro Lys Ile Val Glu Ala Glu Arg Arg Thr Ile Leu Lys Ser Gln Tyr  
 145 150 155 160  
 Ala Leu Ala Asp Asn Cys Glu Leu Thr Ala Lys Tyr Ile Glu Ala Thr  
 165 170 175  
 Gly Gln Lys Val Val Arg Val Gln Pro Phe Met Cys Asp Thr Pro Pro  
 180 185 190  
 Glu Lys Gly Gly Leu Pro Pro Gly Lys Pro Gly Ile Pro Ile Trp Tyr  
 195 200 205  
 Leu Gly Gln Glu  
 210

<210> 236  
 <211> 423  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 236  
aggccacggg gcagaagggt gtgcgtgtgc aaccgttcat gtgcgacaca cctcctgaaa 60  
agggtggcct gccccctggg aaacctggca taccatttg gtaccttggg caagaatgat 120  
gtttttatgc cgccctgggc tttgacgccg attaatgcaaa gctgtgttcg ctcatccaat 180  
acgtccctcg cccagttaaa cgactgttat gtatatgggt gctgccgcta cgtaatacct 240  
tggccctacg catacgaagt taattctgaa agcgttcaat ggacaatctt cctcctcggc 300  
gtcgactgca gcggtaagggt gatctacttt cgaaacactg caagggtagg tccttttttg 360  
gcagcgtcca tataccgacc gtggtatggc tcagatgcgc tggtagtgca tttcaccaaa 420  
taa 423

<210> 237  
<211> 140  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 237  
Arg Pro Arg Gly Arg Arg Leu Cys Val Cys Asn Arg Ser Cys Ala Thr  
1 5 10 15  
His Leu Leu Lys Arg Val Ala Cys Pro Leu Val Asn Leu Ala Tyr Pro  
20 25 30  
Phe Gly Thr Leu Val Lys Asn Asp Val Phe Met Pro Pro Trp Ala Leu  
35 40 45  
Thr Pro Ile Lys Gln Ser Cys Val Arg Ser Ser Asn Thr Ser Leu Ala  
50 55 60  
Gln Leu Asn Asp Cys Tyr Val Tyr Gly Cys Cys Arg Tyr Val Ile Pro  
65 70 75 80  
Trp Pro Tyr Ala Tyr Glu Val Asn Ser Glu Ser Val Gln Trp Thr Ile  
85 90 95  
Phe Leu Leu Gly Val Asp Cys Ser Gly Lys Val Ile Tyr Phe Arg Asn  
100 105 110  
Thr Ala Arg Val Gly Pro Phe Leu Ala Ala Ser Ile Tyr Arg Pro Trp  
115 120 125  
Tyr Gly Ser Asp Ala Leu Val Leu His Phe Thr Lys  
130 135 140

<210> 238  
<211> 546  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 238  
gccaaaatga ttgtcattga caaaaatcta gaacatcttg ttgcgcaatg cgctatatgt 60  
gaaaaaactt tatttgacga gttttctctc aagattcaat tggggcatac atattacgag 120  
ccaaaatctt tgcccgctc tgcaagcatt gtatatgggt cgcatccagc cccgtcgacg 180  
tttttttttg aacccaaaaga aattcagcaa aatttggtgc tgaaatccgg tgagcaagtc 240  
atcacctgca gtaaacatcg atacaaaata ccgttagatt attttggtct ggtgcaaacc 300  
aaaggaaccc ttgcgcgatt gttcgtgcag gtaacctgta atgacgggtca ggtagagccg 360  
gggttcgacg ggtacgtaac ccttgaaatc gtcaatatgt cgccttggac gatagaaata 420  
ccggccgtga gcgatatagc acaactttat ttggtgaaat gcagtaccag cgcactctgag 480  
ccataccacg gtcggtatat ggacgctgcc aaaaaaggac ctacccttgc agtgtttcga 540  
aagtag 546

<210> 239  
<211> 181  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 239

Ala Lys Met Ile Val Ile Asp Lys Asn Leu Glu His Leu Val Ala Gln  
1 5 10 15  
Cys Ala Ile Cys Glu Lys Thr Leu Phe Asp Glu Phe Ser Leu Lys Ile  
20 25 30  
Gln Leu Gly His Thr Tyr Tyr Glu Pro Lys Ser Leu Pro Ala Ser Ala  
35 40 45  
Ser Ile Val Tyr Gly Ser His Pro Ala Pro Ser Thr Phe Phe Leu Glu  
50 55 60  
Pro Lys Glu Ile Gln Gln Asn Leu Val Leu Lys Ser Gly Glu Gln Val  
65 70 75 80  
Ile Thr Cys Ser Lys His Arg Tyr Lys Ile Pro Leu Asp Tyr Phe Gly  
85 90 95  
Leu Val Gln Thr Lys Gly Thr Leu Ala Arg Leu Phe Val Gln Val Thr  
100 105 110  
Cys Asn Asp Gly Gln Val Glu Pro Gly Phe Asp Gly Tyr Val Thr Leu  
115 120 125  
Glu Ile Val Asn Met Ser Pro Trp Thr Ile Glu Ile Pro Ala Val Ser  
130 135 140  
Asp Ile Ala Gln Leu Tyr Leu Val Lys Cys Ser Thr Ser Ala Ser Glu  
145 150 155 160  
Pro Tyr His Gly Arg Tyr Met Asp Ala Ala Lys Lys Gly Pro Thr Leu  
165 170 175  
Ala Val Phe Arg Lys  
180

<210> 240

<211> 765

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 240

aggacaatgg	cagggtggcc	gcgtctcgca	gccaaggac	gaaggacaaa	tctgatgagt	60
gtgttacaga	tcaaagggcg	tacaacgaaa	tcccacacgg	attttgacgc	ggcatcgtac	120
tccagcaaca	gccttatact	cactgatgca	ggggacgaga	gaattgaaga	gttttcctc	180
gaattgtccg	tgggtgaagg	gtggagtgat	aactattctg	gcaacgacaa	aaacctgtgg	240
cgcattgtcg	atggtatgac	gatcaggggt	cacgattctg	ttgtggtgga	ggccgctgaa	300
gaaatcaagg	tgccgcacaa	tcggtacggc	atagtcctac	ctacgggaag	tctttttctc	360
tcacgcggcg	tgctggttgc	ttcggcgaag	gtcgaacctg	catttgatgg	caagctcaag	420
ctcaggatat	tcaacaccac	caacaaaaat	gtctgcctta	ccaaaggcga	gaagcttggc	480
tctgtgattt	ttttctccac	agaatcgacg	cacacccaaa	gccccatcaa	gcggtggcagt	540
gaaatatcga	cgcttcccat	cacgcggcgc	gcgcgattga	agaagtgggt	ttcgctcaat	600
cccaccatat	gggtcgggtg	gacgctgaat	ttaatcgga	gttccctggt	gtcttctctt	660
ataatgtacg	ccgtctatta	caaggttgtg	ctggaacacc	agtcgcagcc	tcctcagtca	720
caacaaaacg	ctcagccatc	gccgaacgaa	gttaagccaa	aatga		765

<210> 241

<211> 254

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 241

Arg Thr Met Ala Gly Trp Pro Arg Leu Ala Ala Gln Gly Arg Arg Thr  
1 5 10 15  
Asn Leu Met Ser Val Leu Gln Ile Lys Gly Arg Thr Thr Lys Ser His  
20 25 30  
Thr Asp Phe Asp Ala Ala Ser Tyr Ser Ser Asn Ser Leu Ile Leu Thr  
35 40 45  
Asp Ala Gly Asp Glu Arg Ile Glu Glu Phe Ser Leu Glu Leu Ser Val

50		55		60											
Gly	Glu	Gly	Trp	Ser	Asp	Asn	Tyr	Ser	Gly	Asn	Asp	Lys	Asn	Leu	Trp
65					70					75					80
Arg	Ile	Val	Asp	Gly	Met	Thr	Ile	Arg	Gly	His	Asp	Ser	Val	Val	Val
				85					90					95	
Glu	Ala	Ala	Glu	Glu	Ile	Lys	Val	Pro	His	Asn	Arg	Tyr	Gly	Ile	Val
			100					105					110		
Leu	Pro	Thr	Gly	Ser	Leu	Phe	Leu	Ser	Arg	Gly	Val	Leu	Val	Ala	Ser
		115					120					125			
Ala	Lys	Val	Glu	Pro	Ala	Phe	Asp	Gly	Lys	Leu	Lys	Leu	Arg	Ile	Phe
	130					135					140				
Asn	Thr	Thr	Asn	Lys	Asn	Val	Cys	Leu	Thr	Lys	Gly	Glu	Lys	Leu	Gly
145					150					155					160
Ser	Val	Ile	Phe	Phe	Ser	Thr	Glu	Ser	Thr	His	Thr	Gln	Ser	Pro	Ile
			165						170					175	
Lys	Arg	Gly	Ser	Glu	Ile	Ser	Thr	Leu	Pro	Ile	Thr	Arg	Arg	Ala	Arg
		180					185					190			
Leu	Lys	Lys	Trp	Phe	Ser	Leu	Asn	Pro	Thr	Ile	Trp	Val	Gly	Trp	Thr
	195						200					205			
Leu	Asn	Leu	Ile	Gly	Ser	Ser	Leu	Val	Ser	Ser	Leu	Ile	Met	Tyr	Ala
	210					215					220				
Val	Tyr	Tyr	Lys	Val	Val	Leu	Glu	His	Gln	Ser	Gln	Pro	Pro	Gln	Ser
225				230					235						240
Gln	Gln	Asn	Ala	Gln	Pro	Ser	Pro	Asn	Glu	Val	Lys	Pro	Lys		
			245						250						

<210> 242  
 <211> 405  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 242	
acggcggtaca ttataagaga agacaccagg gaacttccga ttaaattcag cgtccacccg	60
acccatatgg tgggattgag cgaaaaccac ttcttcaatc gcgcgcgccg cgtgatggga	120
agcgtcgata ttctactgcc acgcttgatg gggctttggg tgtgcgtcga ttctgtggag	180
aaaaaaaaatca cagagccaag cttctcgcct ttggtaaggc agacattttt gttgggtggtg	240
ttgaatatcc tgagcttgag cttgccatca aatgcagggt cgaccttcgc cgaagcaacc	300
agcacgccgc gtgagagaaa aagacttccc gtaggtagga ctatgccgta ccgattgtgc	360
ggcaccttga tttcttcagc ggctccacc acaacagaat cgtga	405

<210> 243  
 <211> 134  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 243	
Thr Ala Tyr Ile Ile Arg Glu Asp Thr Arg Glu Leu Pro Ile Lys Phe	15
1 Ser Val His Pro Thr His Met Val Gly Leu Ser Glu Asn His Phe Phe	30
20 Asn Arg Ala Arg Arg Val Met Gly Ser Val Asp Ile Ser Leu Pro Arg	45
35 Leu Met Gly Leu Trp Val Cys Val Asp Ser Val Glu Lys Lys Ile Thr	60
50 Glu Pro Ser Phe Ser Pro Leu Val Arg Gln Thr Phe Leu Leu Val Val	75
65 70 Leu Asn Ile Leu Ser Leu Ser Leu Pro Ser Asn Ala Gly Ser Thr Phe	80
85 90	95

Ala Glu Ala Thr Ser Thr Pro Arg Glu Arg Lys Arg Leu Pro Val Gly  
 100 105 110  
 Arg Thr Met Pro Tyr Arg Leu Cys Gly Thr Leu Ile Ser Ser Ala Ala  
 115 120 125  
 Ser Thr Thr Thr Glu Ser  
 130

<210> 244  
 <211> 501  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 244  
 tctgtaaacac actcatcaga tttgtccttc gtccttgggc tgcgagacgc ggccaccctg 60  
 ccattgtcct ttataaccggc cgatatcccc ggataccgcc tgaaagatga cgtgcgcaaa 120  
 gcgtgcacca atctgaattt caaacgcctc gctgtgattg ttggtgagcg cgaacgcat 180  
 cggccctaca taacctggag gcagcacact ggaactgaac gttatcccgc ttctgaacag 240  
 cgtgcttctc ggaaaaaaaa gcgccgccag atcttccggc agatcgaatt cttccatggt 300  
 gctcgccaga taagtcttgc ccggttccat gacgaagcag tcatccgggt ctgcgagcac 360  
 gacctcgctg gcaggggtgc gtcgcgtaga ttctcgcaag cttccacccc ctactgtcag 420  
 gcgagagagg cctgcgagtc tgaggtcaaa tccaacgcct tccgggggtgg tcaactcacg 480  
 gtgggcaagg tgcttgatta g 501

<210> 245  
 <211> 166  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 245  
 Ser Val Thr His Ser Ser Asp Leu Ser Phe Val Leu Gly Leu Arg Asp  
 1 5 10 15  
 Ala Ala Thr Leu Pro Leu Ser Phe Ile Pro Ala Asp Ile Pro Gly Tyr  
 20 25 30  
 Arg Leu Lys Asp Asp Val Arg Lys Ala Cys Thr Asn Leu Asn Phe Lys  
 35 40 45  
 Arg Leu Ala Val Ile Val Gly Glu Arg Glu Arg His Arg Pro Tyr Ile  
 50 55 60  
 Thr Trp Arg Gln His Thr Gly Thr Glu Arg Tyr Pro Ala Ser Glu Gln  
 65 70 75 80  
 Arg Ala Ser Arg Lys Lys Lys Arg Arg Gln Ile Phe Arg Gln Ile Glu  
 85 90 95  
 Phe Phe His Gly Ala Arg Gln Ile Ser Leu Ala Arg Phe His Asp Glu  
 100 105 110  
 Ala Val Ile Arg Val Cys Glu His Asp Leu Ala Gly Arg Gly Ala Ser  
 115 120 125  
 Arg Arg Phe Ser Gln Ala Ser Thr Pro Tyr Cys Gln Ala Arg Glu Ala  
 130 135 140  
 Cys Glu Ser Glu Val Lys Ser Asn Ala Phe Arg Gly Gly Gln Leu Thr  
 145 150 155 160  
 Val Gly Lys Val Leu Asp  
 165

<210> 246  
 <211> 534  
 <212> DNA  
 <213> Pseudomonas aeruginosa

```

<400> 246
atgattttact caccgcactc gtccttgaaa ctgggtccggg atggaaaact aatcaagcac      60
cttggcccacc gtgagttgac caccgccgaa ggcgttggat ttgacctcag actcgcaggc      120
ctctctcgcg tgacagtagg ggggtggaagc ttgcgagaat ctacgcgacg cacccttgcc      180
agcgaggtcg tgctcgcaga cccggatgac tgcttcgtca tggaaaccggg caagacttat      240
ctggcgagca ccatggaaga attcgatctg ccggaagatc tggcggcgct tttttttccg      300
agaagcacgc tgttcagaag cgggataacg ttcagttcca gtgtgctgcc tccaggttat      360
gtagggccga tgacgttcgc gctcaccaac aatcacagcg aggcgtttga aattcagatt      420
ggtgcacgct ttgcgcacgt catctttcag gcggtatccg gggatatcgg ccggtataaa      480
ggacaatggc aggggtggccg cgtctcgcag cccaaggacg aaggacaaat ctga      534

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<210> 247
<211> 177
<212> PRT
<213> Pseudomonas aeruginosa

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```

<400> 247
Met Ile Tyr Ser Pro His Ser Leu Leu Lys Leu Val Arg Asp Gly Lys
 1           5           10           15
Leu Ile Lys His Leu Ala His Arg Glu Leu Thr Thr Pro Glu Gly Val
      20           25           30
Gly Phe Asp Leu Arg Leu Ala Gly Leu Ser Arg Leu Thr Val Gly Gly
      35           40           45
Gly Ser Leu Arg Glu Ser Thr Arg Arg Thr Pro Ala Ser Glu Val Val
      50           55           60
Leu Ala Asp Pro Asp Asp Cys Phe Val Met Glu Pro Gly Lys Thr Tyr
 65           70           75           80
Leu Ala Ser Thr Met Glu Glu Phe Asp Leu Pro Glu Asp Leu Ala Ala
      85           90           95
Leu Phe Phe Pro Arg Ser Thr Leu Phe Arg Ser Gly Ile Thr Phe Ser
      100          105          110
Ser Ser Val Leu Pro Pro Gly Tyr Val Gly Pro Met Thr Phe Ala Leu
      115          120          125
Thr Asn Asn His Ser Glu Ala Phe Glu Ile Gln Ile Gly Ala Arg Phe
      130          135          140
Ala His Val Ile Phe Gln Ala Val Ser Gly Asp Ile Gly Arg Tyr Lys
 145          150          155          160
Gly Gln Trp Gln Gly Gly Arg Val Ser Gln Pro Lys Asp Glu Gly Gln
      165          170          175
Ile

```

```

<210> 248
<211> 345
<212> DNA
<213> Pseudomonas aeruginosa

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```

<400> 248
tgggcgttct ctgcctgtcg cctcttttggc atgactggtc aagtcggatg caaacgggtgg      60
tcagcaccaa tgcaattggg tggatcatgt cgatgcaatt acgcagttga gcctggccca      120
gttctctcca agcaaagcat aagaccaaga tggcacattg ccaacaaaaat acccttcccc      180
gctaccggtt ttttatcggt gttgccagcc ctgatctggc ggaaaagccc gctccatgaa      240
tcgtcatgga gcctcccatg tttcaactcc tttcctggat atccaggaag ccgtccccc      300
ccccacaac caaagctgcc ccagggggat tcatccttcc tctga      345

```

```

<210> 249
<211> 114
<212> PRT

```

<213> Pseudomonas aeruginosa

<400> 249

```
Trp Pro Phe Ser Ala Cys Arg Leu Phe Gly Met Thr Gly Gln Val Gly
 1          5          10          15
Cys Lys Arg Trp Ser Ala Pro Met Gln Leu Gly Gly His Val Arg Cys
          20          25          30
Asn Tyr Ala Val Glu Pro Gly Pro Val Pro Pro Lys Gln Ser Ile Arg
          35          40          45
Pro Arg Trp His Ile Ala Asn Lys Ile Pro Phe Pro Ala Thr Val Val
          50          55          60
Leu Ser Leu Leu Pro Ala Leu Ile Trp Arg Lys Ser Pro Leu His Glu
65          70          75          80
Ser Ser Trp Ser Leu Pro Cys Phe Asn Ser Phe Pro Gly Tyr Pro Gly
          85          90          95
Ser Arg Pro Pro Pro Gln Gln Pro Lys Leu Pro Gln Gly Asp Ser Ser
          100          105          110
Phe Leu
```

<210> 250

<211> 414

<212> DNA

<213> Pseudomonas aeruginosa

<400> 250

```
tctggcggaa aagcccgctc catgaatcgt catggagcct cccatgtttc aactcctttc      60
ctggatatcc aggaagccgt cccccacccc aacaaccaa gctgccccag ggggattcat      120
ccttcctctg agcagcatgg aactgctcgg cagcctcgc cgccggcagc tactggagaa      180
catctggcag cgcgcctcgc tatccaagca gcaattcgag gagatctacc ggcggccact      240
ggccaactat gccgagctgg tccagcagct ccctgcttcg gaaaatcatc accatgcca      300
tccaggcggg atgatcgatc acggcctgga gatcgtggcc tacgcactca aggtacggca      360
gacctacctg ctcccgatcg gcgcagcgcc ggagtcacag tcagcccagg ctga          414
```

<210> 251

<211> 137

<212> PRT

<213> Pseudomonas aeruginosa

<400> 251

```
Ser Gly Gly Lys Ala Arg Ser Met Asn Arg His Gly Ala Ser His Val
 1          5          10          15
Ser Thr Pro Phe Leu Asp Ile Gln Glu Ala Val Pro His Pro Asn Asn
          20          25          30
Gln Ser Cys Pro Arg Gly Ile His Pro Ser Ser Glu Gln His Gly Thr
          35          40          45
Ala Arg His Ala Ser Pro Pro Ala Ala Thr Gly Glu His Leu Ala Ala
          50          55          60
Arg Leu Ala Ile Gln Ala Ala Ile Arg Gly Asp Leu Pro Ala Ala Thr
65          70          75          80
Gly Gln Leu Cys Arg Ala Gly Pro Ala Ala Pro Cys Phe Gly Lys Ser
          85          90          95
Ser Pro Cys Pro Ser Arg Arg Asp Asp Arg Ser Arg Pro Gly Asp Arg
          100          105          110
Gly Leu Arg Thr Gln Gly Thr Ala Asp Leu Pro Ala Pro Asp Arg Arg
          115          120          125
Ser Ala Gly Val Thr Val Ser Pro Gly
          130          135
```

<210> 252  
 <211> 1938  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 252  
 atcgtcatgg agcctcccat gtttcaactc ctttcctgga tatccaggaa gccgtccccc 60  
 accccaacaa ccaaagctgc cccaggggga ttcatacctc ctctgagcag catggaactg 120  
 ctcgccacgc ctcgccgcgc gcagctactg gagaacatct ggcagcgcg ctcgctatcc 180  
 aagcagcaat tcgaggagat ctaccggcgc ccaactggcca actatgccga gctgggtccag 240  
 cagctccctg cttcggaaaa tcatcaccat gcccataccag gcgggatgat cgatcacggc 300  
 ctggagatcg tggcctacgc actcaaggta cggcagacct acctgctccc gatcggcgca 360  
 gcgccggagt cacagtcagc ccaggctgaa gcctggtcgc ccgccgcggc gtatggcgcc 420  
 ctgggtcatg acataggcaa gatcgtcgtc gacctgcagg ttgagctaca ggacggcagc 480  
 acctggcacc cttggaacgc accgatcaac cagccatacc gcttcaagta cgtgaagtcc 540  
 cgcgaatacc agctccacgc cgctgcctca gcactttctca tccaccaact gctaccgcgc 600  
 actgcactcg attggctcag tcgctttcca gagctgtggg ctcaattgat ctacctgttc 660  
 gctgggcagt acgagcacgc cgggatcctc ggcgagatca tcgtgaaggc agaccaggcc 720  
 tcagttgcac aggagctagg aggcattccg gatcgagctc tggctgcacc gaagcagtcg 780  
 ctgcagcggc agttggcaga cggccttcgc ttcttgggtga aggacaagtt caagttgaat 840  
 caacctagcg gcccgctctga tggatggctg acccaggacg cactctgggt ggtgagcaag 900  
 cctgctgccg atcaactgag agcctacctg ctggcccagg gtatcgatgg ggtgccctcc 960  
 tctaacgcgc cgttcttcag catgctccag gaccaagccg tcatccagac aaatgccgag 1020  
 gacaaggcca tttggacggc cacggtagac aacggtgctg gatggagaaa caagttcacg 1080  
 ctactcaaga ttgctccagc cttgatctgg acagatgctg ccgagcgccc ctcaccctac 1140  
 agcggatcac tggtcggtga agatggaacc gcctcaacgc aaaagccgga aacgacctgt 1200  
 gaaattccca acgggcccgc tgaacagcag caagcaccag aaacgaagat gatgctccat 1260  
 caacctgcgc cgagcgttgc gaaaccggca aacgagacgc aggcgattgc gaaaccctca 1320  
 actgatgatc aagaagaaac agacgatttg tatgcacttc ttggtaatat caattcgcca 1380  
 ctagaagagc tagacactag ccacgactcg ccggctgcct ctctacgaa cacacgcggg 1440  
 gaggagaacc tacagcagcc actagggacc aaggagccaa cagattgcgc tcctgaagca 1500  
 attgaagatg tatttatgcc tagcagaagt actgatctgg gacagggatt cgttggttgg 1560  
 atgaaatctg gcacgcgggc ccgtcgctcg ttcataacgc acaccaaggc tttggtgcat 1620  
 accgtagacg ggaccgccat gctggtcacg ccaggaattt tcaagcgcta tgtccaagag 1680  
 catccggtgc ttgaaaaact ggcccaagcc aaggagacga ccggctggaa gctggtgcag 1740  
 cgcgcggttc aaaaacaggg gcttcacgcg aagaccagta aaaacctgaa catctggacc 1800  
 atcaaggttt ctggtcctcg caagacgaaa gagctcaagg cctacctgct ccaggatccc 1860  
 aaattgctgt tccctgagca gcctctggac aaccaagcc tcacggtcat caccgatgcc 1920  
 gaaggaggtg tggaatga 1938

<210> 253  
 <211> 645  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 253  
 Ile Val Met Glu Pro Pro Met Phe Gln Leu Leu Ser Trp Ile Ser Arg  
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 Lys Pro Ser Pro Thr Pro Thr Thr Lys Ala Ala Pro Gly Gly Phe Ile  
 20 25 30  
 Leu Pro Leu Ser Ser Met Glu Leu Leu Gly Thr Pro Arg Arg Arg Gln  
 35 40 45  
 Leu Leu Glu Asn Ile Trp Gln Arg Ala Ser Leu Ser Lys Gln Gln Phe  
 50 55 60  
 Glu Glu Ile Tyr Arg Arg Pro Leu Ala Asn Tyr Ala Glu Leu Val Gln  
 65 70 75 80  
 Gln Leu Pro Ala Ser Glu Asn His His His Ala His Pro Gly Gly Met  
 85 90 95

Ile	Asp	His	Gly	Leu	Glu	Ile	Val	Ala	Tyr	Ala	Leu	Lys	Val	Arg	Gln
			100					105					110		
Thr	Tyr	Leu	Leu	Pro	Ile	Gly	Ala	Ala	Pro	Glu	Ser	Gln	Ser	Ala	Gln
		115					120					125			
Ala	Glu	Ala	Trp	Ser	Ala	Ala	Ala	Ala	Tyr	Gly	Ala	Leu	Ala	His	Asp
		130				135					140				
Ile	Gly	Lys	Ile	Val	Val	Asp	Leu	Gln	Val	Glu	Leu	Gln	Asp	Gly	Ser
145					150					155					160
Thr	Trp	His	Pro	Trp	Asn	Gly	Pro	Ile	Asn	Gln	Pro	Tyr	Arg	Phe	Lys
			165						170					175	
Tyr	Val	Lys	Ser	Arg	Glu	Tyr	Gln	Leu	His	Gly	Ala	Ala	Ser	Ala	Leu
			180					185					190		
Leu	Ile	His	Gln	Leu	Leu	Pro	Arg	Thr	Ala	Leu	Asp	Trp	Leu	Ser	Arg
		195				200						205			
Phe	Pro	Glu	Leu	Trp	Ala	Gln	Leu	Ile	Tyr	Leu	Phe	Ala	Gly	Gln	Tyr
		210				215					220				
Glu	His	Ala	Gly	Ile	Leu	Gly	Glu	Ile	Ile	Val	Lys	Ala	Asp	Gln	Ala
225					230					235					240
Ser	Val	Ala	Gln	Glu	Leu	Gly	Gly	Asn	Pro	Asp	Arg	Ala	Leu	Ala	Ala
			245					250						255	
Pro	Lys	Gln	Ser	Leu	Gln	Arg	Gln	Leu	Ala	Asp	Gly	Leu	Arg	Phe	Leu
			260					265					270		
Val	Lys	Asp	Lys	Phe	Lys	Leu	Asn	Gln	Pro	Ser	Gly	Pro	Ser	Asp	Gly
		275					280					285			
Trp	Leu	Thr	Gln	Asp	Ala	Leu	Trp	Leu	Val	Ser	Lys	Pro	Ala	Ala	Asp
	290					295					300				
Gln	Leu	Arg	Ala	Tyr	Leu	Leu	Ala	Gln	Gly	Ile	Asp	Gly	Val	Pro	Ser
305					310					315					320
Ser	Asn	Ala	Pro	Phe	Phe	Ser	Met	Leu	Gln	Asp	Gln	Ala	Val	Ile	Gln
			325						330					335	
Thr	Asn	Ala	Glu	Asp	Lys	Ala	Ile	Trp	Thr	Ala	Thr	Val	Asp	Asn	Gly
			340					345					350		
Ala	Gly	Trp	Arg	Asn	Lys	Phe	Thr	Leu	Leu	Lys	Ile	Ala	Pro	Ala	Leu
		355					360					365			
Ile	Trp	Thr	Asp	Ala	Ala	Glu	Arg	Pro	Ser	Pro	Tyr	Ser	Gly	Ser	Leu
	370					375					380				
Val	Val	Glu	Asp	Gly	Thr	Ala	Ser	Thr	Glu	Lys	Pro	Glu	Thr	Thr	Cys
385					390					395					400
Glu	Ile	Pro	Asn	Gly	Pro	Ala	Glu	Gln	Gln	Gln	Ala	Pro	Glu	Thr	Lys
			405						410					415	
Met	Met	Leu	His	Gln	Pro	Ala	Pro	Ser	Val	Ala	Lys	Pro	Ala	Asn	Glu
			420					425					430		
Thr	Gln	Ala	Ile	Ala	Lys	Pro	Ser	Thr	Asp	Asp	Gln	Glu	Glu	Thr	Asp
		435					440					445			
Asp	Leu	Tyr	Ala	Leu	Leu	Gly	Asn	Ile	Asn	Ser	Pro	Leu	Glu	Glu	Leu
	450					455					460				
Asp	Thr	Ser	His	Asp	Ser	Pro	Ala	Ala	Ser	Pro	Thr	Asn	Thr	Arg	Gly
465					470					475					480
Glu	Glu	Asn	Leu	Gln	Gln	Pro	Leu	Gly	Thr	Lys	Glu	Pro	Thr	Asp	Cys
			485						490					495	
Ala	Pro	Glu	Ala	Ile	Glu	Asp	Val	Phe	Met	Pro	Ser	Arg	Ser	Thr	Asp
			500					505					510		
Leu	Gly	Gln	Gly	Phe	Val	Gly	Trp	Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg
		515					520					525			
Arg	Leu	Phe	Ile	Asn	Asp	Thr	Lys	Ala	Leu	Val	His	Thr	Val	Asp	Gly
	530					535					540				
Thr	Ala	Met	Leu	Val	Thr	Pro	Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu
545					550					555					560
His	Pro	Val	Leu	Glu	Lys	Leu	Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp



```

ggagggcacc ccatcgatac cctgggccag caggtaggct ctcagttgat cggcagcagg 180
cttgctcacc agccagagtg cgtcctgggt cagccatcca tcagacgggc cgctagggtg 240
attcaacttg aacttgctct tcaccaagaa gcgaaggccg tctgccaact gccgctgcag 300
cgactgcttc ggtgcagcca gagctcgatc cggattgcct cctag 345

```

<210> 257  
 <211> 114  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

```

<400> 257
Arg Glu Leu Val Ser Pro Ser Ser Thr Val Val Tyr Arg Gly Arg Pro
1          5          10          15
Asn Gly Leu Val Leu Gly Ile Cys Leu Asp Asp Gly Leu Val Leu Glu
20        25        30
His Ala Glu Glu Arg Arg Val Arg Gly Gly His Pro Ile Asp Thr Leu
35        40        45
Gly Gln Gln Val Gly Ser Gln Leu Ile Gly Ser Arg Leu Ala His Gln
50        55        60
Pro Glu Cys Val Leu Gly Gln Pro Ser Ile Arg Arg Ala Ala Arg Leu
65        70        75        80
Ile Gln Leu Glu Leu Val Leu His Gln Glu Ala Lys Ala Val Cys Gln
85        90        95
Leu Pro Leu Gln Arg Leu Leu Arg Cys Ser Gln Ser Ser Ile Arg Ile
100       105       110
Ala Ser

```

<210> 258  
 <211> 339  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

```

<400> 258
cgcttgaaaa ttcttgccgt gaccagcatg gcggtcccgct ctacgggtatg caccaaagcc 60
ttggtgtcgt tgatgaacag gcgacgggcc gcgatgccag atttcatcca accaacgaat 120
ccctgtccca gatcagtact tctgctaggc ataaatacat cttcaattgc ttcaggagcg 180
caatctgttg gctccttggc ccctagtggc tgctgtaggt tctcctcccc gcgtgtgttc 240
gtaggagagg cagccggcga gtcgtggcta gtgtctagct cttctagtgg cgaattgata 300
ttaccaagaa gtgcatacaa atcgtctgtt tcttcttga 339

```

<210> 259  
 <211> 112  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

```

<400> 259
Arg Leu Lys Ile Pro Gly Val Thr Ser Met Ala Val Pro Ser Thr Val
1          5          10          15
Cys Thr Lys Ala Leu Val Ser Leu Met Asn Arg Arg Arg Ala Ala Met
20        25        30
Pro Asp Phe Ile Gln Pro Thr Asn Pro Cys Pro Arg Ser Val Leu Leu
35        40        45
Leu Gly Ile Asn Thr Ser Ser Ile Ala Ser Gly Ala Gln Ser Val Gly
50        55        60
Ser Leu Val Pro Ser Gly Cys Cys Arg Phe Ser Ser Pro Arg Val Phe
65        70        75        80
Val Gly Glu Ala Ala Gly Glu Ser Trp Leu Val Ser Ser Ser Ser Ser

```

			85						90					95			
Gly	Glu	Leu	Ile	Leu	Pro	Arg	Ser	Ala	Tyr	Lys	Ser	Ser	Val	Ser	Ser		
			100					105					110				

<210> 260  
 <211> 489  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 260

gctgctg	cgctcattcca	cacctccttc	ggcatcggtg	atgaccgtga	ggcttggggtt	60
gtccagaggc	tgctcagga	acagcaattt	gggatcctgg	agcaggtagg	ccttgagctc	120
tttctgtcttg	cgaggaccag	aaaccttgat	gggtccagatg	ttcaggtttt	tactggtcctt	180
ccgatgaagc	ccctgttttt	cgaacgcgcg	ctgcaccagc	ttccagccgg	tcgtctcctt	240
ggcttgggccc	agtttttcaa	gcaccggatg	ctcttggaca	tagcgcttga	aaattcctgg	300
cgtgaccagc	atggcgggtcc	cgtctacggt	atgcaccaaa	gccttgggtgt	cgttgatgaa	360
caggcgcgacgg	gccgcgatgc	cagatttcat	ccaaccaacg	aatccctgtc	ccagatcagt	420
acttctgcta	ggcataaata	catcttcaat	tgcttcagga	gcgcaatctg	ttggctcctt	480
ggtccctag						489

<210> 261  
 <211> 162  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 261

Ala	Ala	Ala	Ala	Ser	Phe	His	Thr	Ser	Phe	Gly	Ile	Gly	Asp	Asp	Arg
1				5					10				15		
Glu	Ala	Trp	Val	Val	Gln	Arg	Leu	Leu	Arg	Glu	Gln	Gln	Phe	Gly	Ile
			20					25					30		
Leu	Glu	Gln	Val	Gly	Leu	Glu	Leu	Phe	Arg	Leu	Ala	Arg	Thr	Arg	Asn
			35				40					45			
Leu	Asp	Gly	Pro	Asp	Val	Gln	Val	Phe	Thr	Gly	Leu	Pro	Met	Lys	Pro
	50				55					60					
Leu	Phe	Phe	Glu	Arg	Ala	Leu	His	Gln	Leu	Pro	Ala	Gly	Arg	Leu	Leu
65					70					75					80
Gly	Leu	Gly	Gln	Phe	Phe	Lys	His	Arg	Met	Leu	Leu	Asp	Ile	Ala	Leu
				85				90						95	
Glu	Asn	Ser	Trp	Arg	Asp	Gln	His	Gly	Gly	Pro	Val	Tyr	Gly	Met	His
			100					105					110		
Gln	Ser	Leu	Gly	Val	Val	Asp	Glu	Gln	Ala	Thr	Gly	Arg	Asp	Ala	Arg
		115				120					125				
Phe	His	Pro	Thr	Asn	Glu	Ser	Leu	Ser	Gln	Ile	Ser	Thr	Ser	Ala	Arg
	130					135					140				
His	Lys	Tyr	Ile	Phe	Asn	Cys	Phe	Arg	Ser	Ala	Ile	Cys	Trp	Leu	Leu
145					150					155					160
Gly	Pro														

<210> 262  
 <211> 396  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 262

acatctggac	catcaagggtt	tctggtcctc	gcaagacgaa	agagctcaag	gcctacctgc	60
tccaggatcc	caaattgctg	ttccctgagc	agcctctgga	caaccaagc	ctcacggtca	120

tcaccgatgc	cgaaggaggt	gtggaatgac	gccgcagcag	ctcaccgagg	agtacatctt	180
cgcgcacgat	ctccgggaag	ccagcgcgaa	gatctaccgc	gccgcgacca	aggcgctgct	240
caagcacttc	ggctctacgg	caaccgtaca	ggacgtggac	caccgggctg	tcctgggatg	300
gcgacgcaag	gtactgggaac	aaggcctgtc	caagcggagc	tggaacacgt	actcgaatca	360
tctgcggacg	atctggggct	atgccatcga	gcatga			396

<210> 263  
 <211> 131  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 263

Thr	Ser	Gly	Pro	Ser	Arg	Phe	Leu	Val	Leu	Ala	Arg	Arg	Lys	Ser	Ser
1				5					10					15	
Arg	Pro	Thr	Cys	Ser	Arg	Ile	Pro	Asn	Cys	Cys	Ser	Leu	Ser	Ser	Leu
			20					25					30		
Trp	Thr	Thr	Gln	Ala	Ser	Arg	Ser	Ser	Pro	Met	Pro	Lys	Glu	Val	Trp
		35					40					45			
Asn	Asp	Ala	Ala	Ala	Ala	His	Arg	Gly	Val	His	Leu	Arg	Ala	Arg	Ser
	50					55					60				
Pro	Gly	Ser	Gln	Arg	Glu	Asp	Leu	Pro	Arg	Arg	Asp	Gln	Gly	Ala	Ala
65					70					75					80
Gln	Ala	Leu	Arg	Ser	Tyr	Gly	Asn	Arg	Thr	Gly	Arg	Gly	Pro	Pro	Gly
				85					90					95	
Cys	Pro	Gly	Met	Ala	Thr	Gln	Gly	Thr	Gly	Thr	Arg	Pro	Val	Gln	Ala
			100					105					110		
Glu	Leu	Glu	His	Val	Leu	Glu	Ser	Ser	Ala	Asp	Asp	Leu	Gly	Leu	Cys
		115					120					125			
His	Arg	Ala													
		130													

<210> 264  
 <211> 690  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 264

gtgaggcaca	agccccctccg	ttattggcac	tacgaactct	ttgtgagtct	tctctgtctc	60
gccgcggatg	aggatcagtt	gattttccca	gtcgatgtcg	cgcttgcgga	tgcacaacag	120
cgcatccaac	cggatgccgg	tgaagtagaa	gacctcaaac	gtgcaaagcc	agaaccaggc	180
gggcgtgatc	cgtgcgcgtt	cgccggtgca	gcgctctgcy	ccgtcctgca	tggtgagcca	240
attgcggggc	agcaggatgg	cttcggcggc	gacggttttg	cttgctcgcc	tgggggggaat	300
gacggtgggtc	tttctgaacg	ggttgacttg	ggagtgcgtc	accaaactcat	gctcgaatggc	360
atagccccag	atcgtccgca	gatgattcga	gtacgtgttc	cagctccgct	tggacaggcc	420
ttgttccagt	accttgcgtc	gccatcccag	gacagcccgg	tggccacgt	cctgtacggt	480
tgccgtagga	ccgaagtgtc	tgagcagcgc	cttggtcgcg	gcgcggtaga	tcttcgcgct	540
ggcttcccgg	agatcgtgcy	cgaagatgta	ctcctcgggt	agctgctgcy	gcgtcattcc	600
acacctcctt	cggcatcggt	gatgaccgtg	aggcttgggt	tgtccagagg	ctgctcaggg	660
aacagcaatt	tgggacccctg	gagcaggtag				690

<210> 265  
 <211> 229  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 265

Val	Arg	His	Lys	Pro	Leu	Arg	Tyr	Trp	His	Tyr	Glu	Leu	Phe	Val	Ser
1				5					10					15	

Leu Leu Cys Leu Ala Ala Asp Glu Asp Gln Leu Ile Phe Pro Val Asp  
 20 25 30  
 Val Ala Leu Ala Asp Ala Gln Gln Arg Ile Gln Pro Asp Ala Gly Glu  
 35 40 45  
 Val Glu Asp Leu Lys Arg Ala Lys Pro Glu Pro Gly Gly Arg Asp Pro  
 50 55 60  
 Cys Ala Phe Ala Gly Ala Ala Leu Cys Ala Val Leu His Val Glu Pro  
 65 70 75 80  
 Ile Ala Gly Glu Gln Asp Gly Phe Gly Gly Asp Gly Phe Ala Cys Ser  
 85 90 95  
 Pro Gly Gly Asn Asp Gly Gly Leu Ser Glu Arg Val Asp Leu Gly Val  
 100 105 110  
 Arg His Gln Leu Met Leu Asp Gly Ile Ala Pro Asp Arg Pro Gln Met  
 115 120 125  
 Ile Arg Val Arg Val Pro Ala Pro Leu Gly Gln Ala Leu Phe Gln Tyr  
 130 135 140  
 Leu Ala Ser Pro Ser Gln Asp Ser Pro Val Val His Val Leu Tyr Gly  
 145 150 155 160  
 Cys Arg Arg Thr Glu Val Leu Glu Gln Arg Leu Gly Arg Gly Ala Val  
 165 170 175  
 Asp Leu Arg Ala Gly Phe Pro Glu Ile Val Arg Glu Asp Val Leu Leu  
 180 185 190  
 Gly Glu Leu Leu Arg Arg His Ser Thr Pro Pro Ser Ala Ser Val Met  
 195 200 205  
 Thr Val Arg Leu Gly Leu Ser Arg Gly Cys Ser Gly Asn Ser Asn Leu  
 210 215 220  
 Gly Ser Trp Ser Arg  
 225

<210> 266  
 <211> 1341  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 266  
 gcagcctctg gacaacccaa gcctcacggt catcacccgat gccgaaggag gtgtggaatg 60  
 acgccgcagc agctcaccga ggagtacatc ttccgcgcacg atctccggga agccagcgcg 120  
 aagatctacc gcgccgcgac caaggcgctg ctcaagcact tcgggtctac ggcaaccgta 180  
 caggacgtgg accaccgggc tgtcctggga tggcgacgca aggtactgga acaaggcctg 240  
 tccaagcgga gctggaacac gtactcgaat catctgcgga cgatctgggg ctatgccatc 300  
 gagcatgagt tggtagcgca ctcccaagtc aaccgcgttc gaaagaccac cgtcattccc 360  
 cccaggcgag caagcaaaac cgtcgccgcc gaagccatcc tgctcgccc caattggctc 420  
 aacatgcagg acggcgcgaga gcgctgcacc ggcgaaacgc cacggatcac gcccgcttg 480  
 ttctggcttt gcacgtttga ggtcttctac ttaccggca tccggttgaa tgcgctgttg 540  
 tgcattccga agcgcgacat cgactgggaa aatcaactga tctcatccg cggcgagaca 600  
 gagaagactc acaaagagtt cgtagtcca ataacggagg ggcttgtgcc tcacctatcg 660  
 aggctcctgc aagaggccga tagagccgga ttccgccgatg acgaccaggt gttcaacgtc 720  
 aaccggttct caccgcacta caagagcaag gtgatgaact ccgaccaggt cgaagccatg 780  
 taccggaagt tgaccgagaa ggttggggtg cggatgacct cgcaccgttt ccggcacacc 840  
 ctggccaccg acttgatgaa ggcaccgag cggaacattc acctcacgaa gtgcctgctc 900  
 aaccactcga atatccagac cacgatgagc tacatcgagg ccgactacga tcacatgcgt 960  
 gccgtgctgc atgctagaag cctggcccaa ggccgcgctg agaatgtcag gaagggtgat 1020  
 tacagcggtc ccccgcaagc ctctgccaaa ccgaagccat gcgggcaacc tctcgctcga 1080  
 gtgagtgaag cgccgccacc ggaggccagg acagagcctg cagaaccaag ggagcacacg 1140  
 ccagggacag gcattcaggg aggtccaacc gcgtgggaag cagatgcgct accacagcca 1200  
 cctgacacct tcgaaccaag cgtgctgttc actctgatgg ctcaaaactt atcgaaccgt 1260  
 gccgcctcgg catccgcggc tcccgtgca acaagcggat caggcggatg gggatctgcc 1320  
 gccgaagca atctcgcta g 1341

<210> 267  
 <211> 446  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 267  
 Ala Ala Ser Gly Gln Pro Lys Pro His Gly His His Arg Cys Arg Arg  
 1 5 10 15  
 Arg Cys Gly Met Thr Pro Gln Gln Leu Thr Glu Glu Tyr Ile Phe Ala  
 20 25 30  
 His Asp Leu Arg Glu Ala Ser Ala Lys Ile Tyr Arg Ala Ala Thr Lys  
 35 40 45  
 Ala Leu Leu Lys His Phe Gly Pro Thr Ala Thr Val Gln Asp Val Asp  
 50 55 60  
 His Arg Ala Val Leu Gly Trp Arg Arg Lys Val Leu Glu Gln Gly Leu  
 65 70 75 80  
 Ser Lys Arg Ser Trp Asn Thr Tyr Ser Asn His Leu Arg Thr Ile Trp  
 85 90 95  
 Gly Tyr Ala Ile Glu His Glu Leu Val Thr His Ser Gln Val Asn Pro  
 100 105 110  
 Phe Arg Lys Thr Thr Val Ile Pro Pro Arg Arg Ala Ser Lys Thr Val  
 115 120 125  
 Ala Ala Glu Ala Ile Leu Leu Ala Arg Asn Trp Leu Asn Met Gln Asp  
 130 135 140  
 Gly Ala Glu Arg Cys Thr Gly Glu Arg Ala Arg Ile Thr Pro Ala Trp  
 145 150 155 160  
 Phe Trp Leu Cys Thr Phe Glu Val Phe Tyr Phe Thr Gly Ile Arg Leu  
 165 170 175  
 Asn Ala Leu Leu Cys Ile Arg Lys Arg Asp Ile Asp Trp Glu Asn Gln  
 180 185 190  
 Leu Ile Leu Ile Arg Gly Glu Thr Glu Lys Thr His Lys Glu Phe Val  
 195 200 205  
 Val Pro Ile Thr Glu Gly Leu Val Pro His Leu Ser Arg Leu Leu Gln  
 210 215 220  
 Glu Ala Asp Arg Ala Gly Phe Ala Asp Asp Asp Gln Leu Phe Asn Val  
 225 230 235 240  
 Asn Arg Phe Ser Pro His Tyr Lys Ser Lys Val Met Asn Ser Asp Gln  
 245 250 255  
 Val Glu Ala Met Tyr Arg Lys Leu Thr Glu Lys Val Gly Val Arg Met  
 260 265 270  
 Thr Pro His Arg Phe Arg His Thr Leu Ala Thr Asp Leu Met Lys Ala  
 275 280 285  
 Pro Glu Arg Asn Ile His Leu Thr Lys Cys Leu Leu Asn His Ser Asn  
 290 295 300  
 Ile Gln Thr Thr Met Ser Tyr Ile Glu Ala Asp Tyr Asp His Met Arg  
 305 310 315 320  
 Ala Val Leu His Ala Arg Ser Leu Ala Gln Gly Ala Leu Glu Asn Val  
 325 330 335  
 Arg Lys Val Asp Tyr Ser Gly Ser Pro Gln Ala Ser Ala Lys Pro Lys  
 340 345 350  
 Pro Cys Gly Gln Pro Leu Ala Arg Val Ser Glu Ala Pro Pro Pro Glu  
 355 360 365  
 Ala Arg Thr Glu Pro Ala Glu Pro Arg Glu His Thr Pro Gly Thr Gly  
 370 375 380  
 Ile Gln Gly Gly Pro Thr Ala Trp Glu Ala Asp Ala Leu Pro Gln Pro  
 385 390 395 400  
 Pro Asp Thr Phe Glu Pro Ser Val Leu Phe Thr Leu Met Ala Gln Asn  
 405 410 415  
 Leu Ser Asn Arg Ala Ala Ser Ala Ser Ala Ala Pro Ala Ala Thr Ser

		420					425				430
Gly	Ser	Gly	Gly	Trp	Gly	Ser	Ala	Ala	Arg	Ser	Asn
		435					440				445
											Ala

<210> 268  
 <211> 459  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 268  
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 ttgcccgcatt ggcttcgggt ttggcagaggc ttgcggggag ccgctgtaat ccaccttcct 180  
 gacattctcc agcgcgcctt gggccaggct tctagcatgc agcacggcac gcatgtgatc 240  
 gtagtcggcc tcgatgtagc tcatcgtggt ctggatattc gagtggttga gcaggcactt 300  
 cgtgaggtga atgttccgct cgggtgcctt catcaagtcg gtggccagggt tgtgccggaa 360  
 acggtgcggg gtcattccgca cccaacctt ctcggtcaac ttccggtaca tggcttcgac 420  
 ctggtcggag ttcatcacct tgctcttgta gtgcggtga 459

<210> 269  
 <211> 152  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 269  
 Arg Ile Cys Phe Pro Arg Gly Trp Thr Ser Leu Asn Ala Cys Pro Trp  
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 Arg Val Leu Pro Trp Phe Cys Arg Leu Cys Pro Gly Leu Arg Trp Arg  
 20 25 30  
 Arg Phe Thr His Ser Ser Glu Arg Leu Pro Ala Trp Leu Arg Phe Gly  
 35 40 45  
 Arg Gly Leu Arg Gly Ala Ala Val Ile His Leu Pro Asp Ile Leu Gln  
 50 55 60  
 Arg Ala Leu Gly Gln Ala Ser Ser Met Gln His Gly Thr His Val Ile  
 65 70 75 80  
 Val Val Gly Leu Asp Val Ala His Arg Gly Leu Asp Ile Arg Val Val  
 85 90 95  
 Glu Gln Ala Leu Arg Glu Val Asn Val Pro Leu Gly Cys Leu His Gln  
 100 105 110  
 Val Gly Gly Gln Gly Val Pro Glu Thr Val Arg Gly His Pro His Pro  
 115 120 125  
 Asn Leu Leu Gly Gln Leu Pro Val His Gly Phe Asp Leu Val Gly Val  
 130 135 140  
 His His Leu Ala Leu Val Val Arg  
 145 150

<210> 270  
 <211> 312  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 270  
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 ctcggcatcc gcggctcccg ctgcaacaag cggatcaggc gcatggggat ctgccgcccg 120  
 aagcaatctc gcctagcgat accggtactg agggccggct accggacgaa aggtagccgt 180  
 gccttcagc agatcgtagg gcctgtagga aaaatctgga attaccgaga gcgcctggat 240  
 tccagcgccg gcatgctggc agagccagcg caatttcaag gccaatacca cagtaccctc 300

tgtaatcgct ga

312

<210> 271  
<211> 103  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 271  
His Leu Arg Thr Lys Arg Ala Val His Ser Asp Gly Ser Lys Leu Ile  
1 5 10 15  
Glu Pro Cys Arg Leu Gly Ile Arg Gly Ser Arg Cys Asn Lys Arg Ile  
20 25 30  
Arg Arg Met Gly Ile Cys Arg Pro Lys Gln Ser Arg Leu Ala Ile Pro  
35 40 45  
Val Leu Arg Ala Gly Tyr Arg Thr Lys Gly Ser Arg Ala Phe Gln Gln  
50 55 60  
Ile Val Arg Pro Val Gly Lys Ile Trp Asn Tyr Arg Glu Arg Leu Asp  
65 70 75 80  
Ser Ser Ala Gly Met Leu Ala Glu Pro Ala Gln Phe Gln Gly Gln Tyr  
85 90 95  
His Ser Thr Leu Cys Asn Arg  
100

<210> 272  
<211> 2970  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 272  
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ccccgattgg aatttggctc cgcgacctgg actcgaacca gggacccaat gattaacagt 120  
catttgctct accgactgag ctatcgcgga acgtctttct tccaaccctg gacgcttccg 180  
gtggttgctgg attcgctctc cagaggcgcg ccattttacg gatgcgcgcg ggcattgtcaa 240  
ccctctgatc caaaaagttt ttcttctttt tccacgagcg acaaaacggc ccttccactg 300  
catgcggcag cgtctcgcg cctaccggac gcccatgaaa aagccccgcc gaagcggggc 360  
tttccctgtc cgccccgaa gaggtcaggc gaagacgatc tcgtcgcctt ccaccttcgc 420  
cgagatactg gcacccggcg cgaatttgcc ggccaggatc agttgcgcca gcgggttctc 480  
gatccagcgc tggatggccc gcttcagcgg gcgtgcgcca tagaccgggt cgaagccgac 540  
ggcaatcagc ttgtccagcg cctcctggct cagttccagg ctacgctcgc gctcggccag 600  
gcgcttgccg aggcgaccga gctggatctc ggcgatgccg gcgatctgct cgcgagccag 660  
cggctcgaac accaccactt cgtcgatccg gttgatgaat tccggacgga agtgcgcatt 720  
gaccgcgtcc atcactgcgg cacgttgccg ctgcgggtcg ccggccagct cctggatctg 780  
cgccgaaccg aggttgagg tcatcaccac cacggtggtg cggaagtcca ccgtacgccc 840  
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ccacttgaa accacttcgg cgatttcttc gtcggtcacc ttgttgcgca gcaactgggt 1380  
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atcggtgatg	tagcggtgcg	acagcttggc	cgcggcgatg	atcgcgccgt	cggtgatgct	1860
caccccggtg	tgcacttcat	agcggttcct	gaggccacgg	aggatggcga	tggtgtcttc	1920
ctcgctcggt	tgtccacca	gcaccttctg	gaagcggcgc	tccagcgcg	catccttctc	1980
gatgtactgg	cgatactcgt	cgagggtagt	agcaccgacg	cagtgcagct	cgccgcgcgc	2040
cagagccggc	ttgagcatgt	tgcggcgctc	catggcacct	tccgccttgc	cggcgccgac	2100
catggtgtgc	agttcgtcga	tgaacaggat	gaccgcgcct	tcctgcttgc	ccagttcggt	2160
gaggaccgcc	ttcaggcggt	cctcgaactc	gccgcggaac	ttggcaccgg	cgatcagcgc	2220
ccccatgtcc	agggccagca	ggcgcttgct	cttgaggccg	tccggcactt	cgccgttgat	2280
gatgcgctgg	gccaggccct	cgacgatggc	ggtcttgccg	acgccggggt	cgccgatcag	2340
caccgggttg	ttcttggtcc	gccgctgcag	gacctggatg	gtccggcgga	tctcgctcgt	2400
gcgaccgatc	accgggtcga	gcttgccctc	ctcggcgcg	ttggtcatgt	cgacggtgta	2460
cttgctccagc	gcctggcgcg	actcctcgac	gttcgggtcg	ttcaccgctt	cgccgccacg	2520
caggttggcc	acggcattct	ccagcgcctt	gcgcgacacg	ccctggccga	gcagcagctt	2580
gccgagcctg	gtgttctcgt	ccatcgcggc	cagcaatacc	agctcgctgg	agatgaactg	2640
gtcgcccttc	tgtcgggcca	ggcggtcagc	ctggttgagc	aggcgtgcga	gacctgggga	2700
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gccgctgcgc	agggcggcga	tatcgaagcc	gacctgcata	agcagggggt	tgatcgaacc	2820
gccttgctgc	tcgagcaggg	cggaaagcag	gtgcaccggc	tcgatggccg	gatggtcatg	2880
gccaacggcc	agggactggg	cgtcggagag	cgccagttgc	agcttgctgg	tcaaacggtc	2940
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<210> 273

<211> 989

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 273

Arg	Asp	Ser	Asn	Ser	Arg	His	Pro	Ala	Pro	Lys	Ala	Gly	Ala	Leu	Pro
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			20					25					30		
Thr	Arg	Asp	Pro	Met	Ile	Asn	Ser	His	Leu	Leu	Tyr	Arg	Leu	Ser	Tyr
		35					40					45			
Arg	Gly	Thr	Ser	Phe	Phe	Gln	Pro	Trp	Thr	Leu	Pro	Val	Leu	Leu	Asp
	50					55					60				
Ser	Arg	Leu	Arg	Gly	Ala	Pro	Phe	Tyr	Gly	Cys	Ala	Arg	Ala	Cys	Gln
	65				70					75				80	
Pro	Ser	Asp	Pro	Lys	Ser	Phe	Ser	Ser	Phe	Ser	Thr	Ser	Asp	Lys	Thr
			85						90					95	
Ala	Leu	Pro	Leu	His	Ala	Ala	Ala	Leu	Ser	Arg	Leu	Pro	Asp	Ala	His
		100						105					110		
Glu	Lys	Ala	Pro	Pro	Lys	Arg	Gly	Phe	Pro	Cys	Pro	Pro	Pro	Lys	Arg
	115						120					125			
Ser	Gly	Glu	Asp	Asp	Leu	Val	Ala	Phe	His	Leu	Arg	Arg	Asp	Thr	Gly
	130					135					140				
Thr	Arg	Arg	Glu	Phe	Ala	Gly	Gln	Asp	Gln	Leu	Arg	Gln	Arg	Val	Leu
	145				150					155					160
Asp	Pro	Ala	Leu	Asp	Gly	Pro	Leu	Gln	Arg	Ala	Cys	Ala	Ile	Asp	Arg
			165					170						175	
Val	Glu	Ala	Asp	Gly	Asn	Gln	Leu	Val	Gln	Arg	Leu	Leu	Ala	Gln	Phe
		180					185						190		
Gln	Ala	Gln	Leu	Ala	Leu	Gly	Gln	Ala	Leu	Ala	Gln	Ala	Thr	Glu	Leu
	195						200					205			
Asp	Leu	Gly	Asp	Ala	Gly	Asp	Leu	Leu	Ala	Ser	Gln	Arg	Leu	Glu	His
	210					215					220				
His	His	Phe	Val	Asp	Pro	Val	Asp	Glu	Phe	Arg	Thr	Glu	Val	Arg	Ile
	225				230					235					240
Asp	Arg	Val	His	His	Cys	Gly	Thr	Leu	Arg	Leu	Ala	Val	Ala	Gly	Gln



Glu Asp Arg Leu Gln Ala Phe Leu Glu Leu Ala Ala Glu Leu Gly Thr  
 725 730 735  
 Gly Asp Gln Arg Pro His Val Gln Gly Gln Gln Ala Leu Val Leu Glu  
 740 745 750  
 Ala Val Arg His Phe Ala Val Asp Asp Ala Leu Gly Gln Ala Leu Asp  
 755 760 765  
 Asp Gly Gly Leu Ala Asp Ala Gly Phe Ala Asp Gln His Arg Val Val  
 770 775 780  
 Leu Gly Pro Pro Leu Gln Asp Leu Asp Gly Pro Ala Asp Leu Val Val  
 785 790 795 800  
 Ala Thr Asp His Arg Val Glu Leu Ala Phe Leu Gly Ala Leu Gly His  
 805 810 815  
 Val Asp Gly Val Leu Val Gln Arg Leu Ala Arg Leu Leu Asp Val Arg  
 820 825 830  
 Val Val His Arg Phe Ala Ala Thr Gln Val Gly His Gly Ile Leu Gln  
 835 840 845  
 Arg Leu Ala Arg His Ala Leu Ala Glu Gln Gln Leu Ala Glu Pro Gly  
 850 855 860  
 Val Leu Val His Arg Gly Gln Gln Tyr Gln Leu Ala Gly Asp Glu Leu  
 865 870 875 880  
 Val Ala Leu Leu Leu Gly Gln Ala Val Ser Leu Val Glu Gln Ala Cys  
 885 890 895  
 Glu Ile Leu Gly Gln Val His Val Ala Gly Arg Ala Leu Asp Leu Arg  
 900 905 910  
 Gln Arg Val Glu Phe Phe Val Glu Ala Ala Ala Gln Gly Gly Asp Ile  
 915 920 925  
 Glu Ala Asp Leu His Gln Gln Gly Leu Asp Arg Thr Ala Leu Leu Leu  
 930 935 940  
 Glu Gln Gly Gly Lys Gln Val His Arg Leu Asp Gly Arg Met Val Met  
 945 950 955 960  
 Ala Asn Gly Gln Gly Leu Gly Val Gly Glu Arg Gln Leu Gln Leu Ala  
 965 970 975  
 Gly Gln Thr Val Tyr Ser His Gly Ser Ser Phe Leu Leu  
 980 985

<210> 274  
 <211> 384  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 274  
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 tttcttcttt ttccacgagc gacaaaacgg cccttccact gcatgcggca gcgctctcgc 180  
 gcctaccgga cgcccatgaa aaagccccgc cgaagcgggg ctttccctgt ccgccccga 240  
 agaggtcagg cgaagacgat ctcgtcgct tccaccttcg ccgagatact ggcacccggc 300  
 gcgaatttgc cggccaggat cagttgcgcc agcgggttct cgatccagcg ctggatggcc 360  
 cgcttcagcg ggcgtgcgcc atag 384

<210> 275  
 <211> 127  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 275  
 Ala Ile Ala Glu Arg Leu Ser Ser Asn Pro Gly Arg Phe Arg Cys Cys  
 1 5 10 15  
 Trp Ile Arg Val Ser Glu Ala Arg His Phe Thr Asp Ala Arg Gly His

		20						25					30				
Val	Asn	Pro	Leu	Ile	Gln	Lys	Val	Phe	Leu	Leu	Phe	Pro	Arg	Ala	Thr		
		35					40					45					
Lys	Arg	Pro	Phe	His	Cys	Met	Arg	Gln	Arg	Ser	Arg	Ala	Tyr	Arg	Thr		
		50				55					60						
Pro	Met	Lys	Lys	Pro	Arg	Arg	Ser	Gly	Ala	Phe	Pro	Val	Arg	Pro	Arg		
65					70				75						80		
Arg	Gly	Gln	Ala	Lys	Thr	Ile	Ser	Ser	Pro	Ser	Thr	Phe	Ala	Glu	Ile		
				85				90						95			
Leu	Ala	Pro	Gly	Ala	Asn	Leu	Pro	Ala	Arg	Ile	Ser	Cys	Ala	Ser	Gly		
			100					105					110				
Phe	Ser	Ile	Gln	Arg	Trp	Met	Ala	Arg	Phe	Ser	Gly	Arg	Ala	Pro			
		115					120					125					

<210> 276  
 <211> 1677  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 276

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cagccgcac	cgcatggaga	tcgactccaa	gccggaggaa	ctggatcgtc	tcgaccgtcg	180
cctgatccag	ctgaagatcg	agcgcgaggg	gctgaagaag	gaagacgacg	aagccaccag	240
gaagcgcctg	gccaaagtgg	aggaggatat	cgtcaagctc	gagcgcgaat	acgccgacct	300
cgaggagatc	tggaagtccg	agaaggccga	ggtgcagggc	tcggcgcaga	tccagcagaa	360
gatcgagcag	gccaaagcag	agatggaggc	ggcgcggcgc	aagggcgacc	tcgagagcat	420
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gcacggcaag	accgagaacc	agttgtctgc	caacaaggtg	accgacgagg	aaatcgccga	540
agtggtttcc	aagtggaccg	gtatcccggg	gtcgaagatg	ctcgagggcg	agcgcgagaa	600
gctgctgcgc	atggagcagg	agctgcatcg	gcgagtgatc	ggccaggacg	aggcggtagt	660
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cggtcgttcc	ctcttcctcg	gcccgcaccg	ggtgggcaag	accgagttgt	gcaaggcgct	780
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cctgaccgac	agtcacgggc	gtacggtgga	cttcgcgaac	accgtggtgg	tgatgacctc	1080
caacctcggt	tcggcgcaga	tccaggagct	ggccggcgac	cgcgaggcgc	aacgtgccgc	1140
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ggtggtgttc	gagccgctgg	ctcgcgagca	gatcgccggc	atcgccgaga	tccagctcgg	1260
tcgcctgcgc	aagcgcctgg	ccgagcgcga	gctgagcctg	gaactgagcc	aggaggcgct	1320
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gggtgccagt	atctcggcga	aggtggaagg	cgacgagatc	gtcttcgcct	gacctcttcg	1500
ggggcggaca	gggaaagccc	cgcttcggcg	gggctttttc	atgggcgtcc	ggtaggcgcg	1560
agagcgctgc	cgcatgcagt	ggaagggccg	ttttgtcgct	cgtggaaaaa	gaagaaaaac	1620
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<210> 277  
 <211> 558  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 277

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			20					25				30			
His	Arg	Pro	Asp	Arg	Arg	Gly	Arg	Gln	Pro	His	Pro	His	Gly	Asp	Arg
		35					40					45			
Leu	Gln	Ala	Gly	Gly	Thr	Gly	Ser	Ser	Arg	Pro	Ser	Pro	Asp	Pro	Ala
	50					55					60				
Glu	Asp	Arg	Ala	Arg	Gly	Ala	Glu	Glu	Gly	Arg	Arg	Arg	Ser	His	Gln
65					70					75				80	
Glu	Ala	Pro	Gly	Gln	Ala	Gly	Gly	Gly	Tyr	Arg	Gln	Ala	Arg	Ala	Arg
				85					90					95	
Ile	Arg	Arg	Pro	Arg	Gly	Asp	Leu	Glu	Val	Arg	Glu	Gly	Arg	Gly	Ala
			100					105					110		
Gly	Leu	Gly	Ala	Asp	Pro	Ala	Glu	Asp	Arg	Ala	Gly	Gln	Ala	Gly	Asp
		115					120					125			
Gly	Gly	Gly	Ala	Ala	Gln	Gly	Arg	Pro	Arg	Glu	His	Gly	Ala	His	Pro
	130					135					140				
Val	Pro	Asp	His	Pro	Gly	Pro	Gly	Thr	Gln	Pro	Ala	Asp	Gly	Arg	Pro
145					150					155					160
Ala	Arg	Gln	Asp	Arg	Glu	Pro	Val	Ala	Ala	Gln	Gln	Gly	Asp	Arg	Arg
				165					170					175	
Gly	Asn	Arg	Arg	Ser	Gly	Phe	Gln	Val	Asp	Arg	Tyr	Pro	Gly	Val	Glu
			180				185						190		
Asp	Ala	Arg	Gly	Arg	Ala	Arg	Glu	Ala	Ala	Ala	His	Gly	Ala	Gly	Ala
		195					200					205			
Ala	Ser	Ala	Ser	Asp	Arg	Pro	Gly	Arg	Gly	Gly	Ser	Arg	Arg	Val	Gln
	210					215					220				
Arg	Arg	Ala	Pro	Phe	Ala	Arg	Arg	Pro	Arg	Arg	Ser	Glu	Pro	Ala	Glu
225					230					235					240
Arg	Leu	Val	Pro	Leu	Pro	Arg	Pro	Asp	Arg	Gly	Gly	Gln	Asp	Arg	Val
				245					250					255	
Val	Gln	Gly	Ala	Gly	Arg	Val	Pro	Leu	Arg	Tyr	Arg	Gly	Gly	Ala	Gly
			260					265					270		
Ala	Asp	Arg	Tyr	Val	Arg	Val	His	Gly	Glu	Thr	Leu	Gly	Gly	Pro	Pro
		275					280					285			
Asp	Arg	Arg	Ala	Ser	Gly	Leu	Arg	Arg	Leu	Arg	Gly	Arg	Arg	Leu	Pro
	290					295					300				
Asp	Arg	Gly	Asp	Pro	Pro	Gln	Ala	Leu	Leu	Gly	Gly	Ala	Ala	Gly	Arg
305					310					315					320
Gly	Gly	Glu	Gly	Pro	Ser	Gly	Cys	Ile	Gln	His	Ser	Pro	Pro	Gly	Ala
				325					330					335	
Arg	Gly	Arg	Thr	Pro	Asp	Arg	Gln	Ser	Arg	Ala	Tyr	Gly	Gly	Leu	Pro
			340				345						350		
Gln	His	Arg	Gly	Gly	Asp	Asp	Leu	Gln	Pro	Arg	Phe	Gly	Ala	Asp	Pro
		355					360					365			
Gly	Ala	Gly	Arg	Arg	Pro	Arg	Gly	Ala	Thr	Cys	Arg	Ser	Asp	Gly	Arg
	370					375					380				
Gly	Gln	Cys	Ala	Leu	Pro	Ser	Gly	Ile	His	Gln	Pro	Asp	Arg	Arg	Ser
385					390					395					400
Gly	Gly	Val	Arg	Ala	Ala	Gly	Ser	Arg	Ala	Asp	Arg	Arg	His	Arg	Arg
				405					410					415	
Asp	Pro	Ala	Arg	Ser	Pro	Ala	Gln	Ala	Pro	Gly	Arg	Ala	Arg	Ala	Glu
			420					425					430		
Pro	Gly	Thr	Glu	Pro	Gly	Gly	Ala	Gly	Gln	Ala	Asp	Cys	Arg	Arg	Leu
		435					440					445			
Arg	Pro	Gly	Leu	Trp	Arg	Thr	Pro	Ala	Glu	Ala	Gly	His	Pro	Ala	Leu
	450					455					460				
Asp	Arg	Glu	Pro	Ala	Gly	Ala	Thr	Asp	Pro	Gly	Arg	Gln	Ile	Arg	Ala
465					470					475					480
Gly	Cys	Gln	Tyr	Leu	Gly	Glu	Gly	Gly	Arg	Arg	Arg	Asp	Arg	Leu	Arg
				485					490					495	

Leu Thr Ser Ser Gly Ala Asp Arg Glu Ser Pro Ala Ser Ala Gly Leu  
500 505 510  
Phe His Gly Arg Pro Val Gly Ala Arg Ala Leu Pro His Ala Val Glu  
515 520 525  
Gly Pro Phe Cys Arg Ser Trp Lys Lys Lys Lys Asn Phe Leu Asp Gln  
530 535 540  
Arg Val Asp Met Pro Ala Arg Ile Arg Lys Met Ala Arg Leu  
545 550 555

<210> 278  
<211> 357  
<212> DNA  
<213> *Pseudomonas aeruginosa*

<400> 278  
aaaagccccg ccgaagcggg gctttccctg tccgcccccg aagagggtcag gcgaagacga 60  
tctcgtcgcc ttccaccttc gccgagatac tggcaccggg cgcgaatttg ccggccagga 120  
tcagttgctc cagcgggttc tcgatccagc gctggatggc ccgcttcagc gggcgtgcgc 180  
catagaccgg gtcgaagccg acggcaatca gcttgtccag cgcctcctgg ctcagttcca 240  
ggctcagctc gcgctcggcc aggcgcttgc gcaggcgacc gagctggatc tcggcgatgc 300  
cggcgatctg ctcgcgagcc agcggctcga acaccaccac ttcgtcgatc cggttga 357

<210> 279  
<211> 118  
<212> PRT  
<213> *Pseudomonas aeruginosa*

<400> 279  
Lys Ser Pro Ala Glu Ala Gly Leu Ser Leu Ser Ala Pro Glu Glu Val  
1 5 10 15  
Arg Arg Arg Arg Ser Arg Arg Leu Pro Pro Ser Pro Arg Tyr Trp His  
20 25 30  
Pro Ala Arg Ile Cys Arg Pro Gly Ser Val Ala Pro Ala Gly Ser Arg  
35 40 45  
Ser Ser Ala Gly Trp Pro Ala Ser Ala Gly Val Arg His Arg Pro Gly  
50 55 60  
Arg Ser Arg Arg Gln Ser Ala Cys Pro Ala Pro Pro Gly Ser Val Pro  
65 70 75 80  
Gly Ser Ala Arg Ala Arg Pro Gly Ala Cys Ala Gly Asp Arg Ala Gly  
85 90 95  
Ser Arg Arg Cys Arg Arg Ser Ala Arg Glu Pro Ala Ala Arg Thr Pro  
100 105 110  
Pro Leu Arg Arg Ser Gly  
115

<210> 280  
<211> 2580  
<212> DNA  
<213> *Pseudomonas aeruginosa*

<400> 280  
aaggaaggac gacccatgct aatagaccgt ttgaccagca agctgcaact ggcgctctcc 60  
gacgcccagt ccctggccgt tggccatgac catccggcca tcgagccggt gcacctgctt 120  
tccgccctgc tcgagcagca aggcgggttc atcaagcccc tgctgatgca ggtcggcttc 180  
gatatcgccg ccctgcgcag cggcctcaac aaagaactcg acgcgtgcc gaagatccag 240  
agcccgaccg gcgacgtgaa cctgtcccag gatctcgac gcctgctcaa ccaggctgac 300  
cgcttgcccc agcagaaggg cgaccagttc atctccagcg agctgggtatt gctggccgcg 360

atggacgaga	acaccaggct	cggcaagctg	ctgctcggcc	agggcggtgc	gcgcaaggcg	420
ctggagaatg	ccgtggccaa	cctgcgtggc	ggcgaagcgg	tgaacgaccc	gaacgtcgag	480
gagtcgcgcc	aggcgctgga	caagtacacc	gtcgacatga	ccaagcgcg	cgaggaaggc	540
aagctcgacc	cggatgatcg	tcgcgacgac	gagatccgcc	ggaccatcca	ggtcctgcag	600
cggcggacca	agaacaaccc	ggtgctgata	ggcgaacccg	gcgtcggcaa	gaccgccatc	660
gtcgagggcc	tggcccagcg	catcatcaac	ggcgaagtgc	cggacggcct	caaggacaag	720
cgcttgcgtg	ccctggacat	gggggcgctg	atcgccggtg	ccaagtcccg	cggcgagttc	780
gaggaacgcc	tgaaggcgg	cctcaacgaa	ctgggcaagc	aggaaggccg	ggtcatcctg	840
ttcatcgacg	aactgcacac	catggtcggc	gccggcaagg	cggaaagggtg	catggacgcc	900
ggcaacatgc	tcaagccggc	tctggcgcg	ggcgagctgc	actgcgtcgg	tgctactacc	960
ctcgacgagt	atcgccagta	catcgagaag	gatgccgcgc	tggagcgccg	cttcaggag	1020
gtgctggtgg	acgaaccgag	cgaggaagac	accatcgcca	tcctccgtgg	cctcaaggaa	1080
cgctatgaag	tgcaccacgg	ggtgagcatc	accgacggcg	cgatcatcgc	cgcggccaag	1140
ctgtcgcacc	gctacatcac	cgatcggcaa	ctgccggaca	aggccatcga	cctgatcgac	1200
gagggcgcca	gccgcatccg	catggagatc	gactccaagc	cggaggaact	ggatcgtctc	1260
gaccgtcgcc	tgatccagct	gaagatcgag	cgcgagggcg	tgaagaagga	agacgacgaa	1320
gccaccagga	agcgctggc	caagctggag	gaggatatcg	tcaagctcga	gcgcgaatac	1380
gccgacctcg	aggagatctg	gaagtccgag	aaggccgagg	tgcagggctc	ggcgagatc	1440
cagcagaaga	tcgagcaggc	caagcaggag	atggaggcgg	cgcggcgcaa	ggcgacctc	1500
gagagcatgg	cgcgcatcca	gtaccagacc	atcccggacc	tggaaacgcag	cctgcagatg	1560
gtcgaccagc	acggcaagac	cgagaaccag	ttgctgcgca	acaagggtgac	cgacgaggaa	1620
atcgccgaag	tggtttccaa	gtggaccggt	atcccgggtg	cgaagatgct	cgagggcgag	1680
cgcgagaagc	tgctgcgcat	ggagcaggag	ctgcatcggc	gagtgatcgg	ccaggacgag	1740
gcggtagtcg	ccgtgtccaa	cgccgtgcgc	cgttcgcgcg	ccggcctcgc	cgatccgaac	1800
cggccgagcg	gctcgttcct	cttcctcggc	ccgaccgggg	tgggcaagac	cgagttgtgc	1860
aaggcgctgg	ccgagttcct	cttcgatacc	gaggaggcgc	tggtgcggat	agatatgtcc	1920
gagttcatgg	agaaacactc	ggtggcccgc	ctgatcggcg	cgctccgggg	ctacgtcggc	1980
ttcgaggaag	gcggctacct	gaccgaggcg	atccgcgcga	agccctactc	ggtggtgctg	2040
ctggacgagg	tggagaaggc	ccatccggat	gtattcaaca	ttctcctcca	ggtgctcgag	2100
gacggacgcc	tgaccgacag	tcacgggcgt	acggtggact	tccgcaacac	cgtggtggtg	2160
atgacctcca	acctcggttc	ggcgagatc	caggagctgg	ccggcgaccg	cgaggcgcaa	2220
cgtgccgcag	tgatggacgc	ggtcaatgcg	cacttcgctc	cggaattcat	caaccggatc	2280
gacgaagtgg	tggtgttcga	gccgctggct	cgcgagcaga	tcgccggcat	cgccgagatc	2340
cagctcggtc	gcctgcgcaa	gcgctggcc	gagcgcgagc	tgagcctgga	actgagccag	2400
gaggcgctgg	acaagctgat	tgccgtcggc	ttcgaccggg	tctatggcgc	acgcccgtg	2460
aagcgggcca	tccagcgctg	gatcgagaac	cgcgtggcgc	aactgatact	ggcgggcaaa	2520
ttcgcgccgg	gtgccagtat	ctcggcgaag	gtggaaggcg	acgagatcgt	cttcgcctga	2580

<210> 281

<211> 859

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 281

Lys	Glu	Gly	Arg	Pro	Met	Arg	Ile	Asp	Arg	Leu	Thr	Ser	Lys	Leu	Gln
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Leu	Ala	Leu	Ser	Asp	Ala	Gln	Ser	Leu	Ala	Val	Gly	His	Asp	His	Pro
			20					25					30		
Ala	Ile	Glu	Pro	Val	His	Leu	Leu	Ser	Ala	Leu	Leu	Glu	Gln	Gln	Gly
		35					40					45			
Gly	Ser	Ile	Lys	Pro	Leu	Leu	Met	Gln	Val	Gly	Phe	Asp	Ile	Ala	Ala
		50				55				60					
Leu	Arg	Ser	Gly	Leu	Asn	Lys	Glu	Leu	Asp	Ala	Leu	Pro	Lys	Ile	Gln
65					70				75					80	
Ser	Pro	Thr	Gly	Asp	Val	Asn	Leu	Ser	Gln	Asp	Leu	Ala	Arg	Leu	Leu
			85					90					95		
Asn	Gln	Ala	Asp	Arg	Leu	Ala	Gln	Gln	Lys	Gly	Asp	Gln	Phe	Ile	Ser
			100					105					110		

Ser	Glu	Leu	Val	Leu	Leu	Ala	Ala	Met	Asp	Glu	Asn	Thr	Arg	Leu	Gly
		115					120					125			
Lys	Leu	Leu	Leu	Gly	Gln	Gly	Val	Ser	Arg	Lys	Ala	Leu	Glu	Asn	Ala
	130					135					140				
Val	Ala	Asn	Leu	Arg	Gly	Glu	Ala	Val	Asn	Asp	Pro	Asn	Val	Glu	
145					150					155					160
Glu	Ser	Arg	Gln	Ala	Leu	Asp	Lys	Tyr	Thr	Val	Asp	Met	Thr	Lys	Arg
			165						170					175	
Ala	Glu	Glu	Gly	Lys	Leu	Asp	Pro	Val	Ile	Gly	Arg	Asp	Asp	Glu	Ile
			180					185					190		
Arg	Arg	Thr	Ile	Gln	Val	Leu	Gln	Arg	Arg	Thr	Lys	Asn	Asn	Pro	Val
	195						200					205			
Leu	Ile	Gly	Glu	Pro	Gly	Val	Gly	Lys	Thr	Ala	Ile	Val	Glu	Gly	Leu
	210					215					220				
Ala	Gln	Arg	Ile	Ile	Asn	Gly	Glu	Val	Pro	Asp	Gly	Leu	Lys	Asp	Lys
225					230					235					240
Arg	Leu	Leu	Ala	Leu	Asp	Met	Gly	Ala	Leu	Ile	Ala	Gly	Ala	Lys	Phe
			245						250					255	
Arg	Gly	Glu	Phe	Glu	Glu	Arg	Leu	Lys	Ala	Val	Leu	Asn	Glu	Leu	Gly
			260					265					270		
Lys	Gln	Glu	Gly	Arg	Val	Ile	Leu	Phe	Ile	Asp	Glu	Leu	His	Thr	Met
	275					280						285			
Val	Gly	Ala	Gly	Lys	Ala	Glu	Gly	Ala	Met	Asp	Ala	Gly	Asn	Met	Leu
	290					295					300				
Lys	Pro	Ala	Leu	Ala	Arg	Gly	Glu	Leu	His	Cys	Val	Gly	Ala	Thr	Thr
305					310					315					320
Leu	Asp	Glu	Tyr	Arg	Gln	Tyr	Ile	Glu	Lys	Asp	Ala	Ala	Leu	Glu	Arg
				325					330					335	
Arg	Phe	Gln	Lys	Val	Leu	Val	Asp	Glu	Pro	Ser	Glu	Glu	Asp	Thr	Ile
			340					345					350		
Ala	Ile	Leu	Arg	Gly	Leu	Lys	Glu	Arg	Tyr	Glu	Val	His	His	Gly	Val
		355					360					365			
Ser	Ile	Thr	Asp	Gly	Ala	Ile	Ile	Ala	Ala	Ala	Lys	Leu	Ser	His	Arg
	370					375					380				
Tyr	Ile	Thr	Asp	Arg	Gln	Leu	Pro	Asp	Lys	Ala	Ile	Asp	Leu	Ile	Asp
385					390					395					400
Glu	Ala	Ala	Ser	Arg	Ile	Arg	Met	Glu	Ile	Asp	Ser	Lys	Pro	Glu	Glu
			405						410					415	
Leu	Asp	Arg	Leu	Asp	Arg	Arg	Leu	Ile	Gln	Leu	Lys	Ile	Glu	Arg	Glu
			420					425					430		
Ala	Leu	Lys	Lys	Glu	Asp	Asp	Glu	Ala	Thr	Arg	Lys	Arg	Leu	Ala	Lys
		435					440					445			
Leu	Glu	Glu	Asp	Ile	Val	Lys	Leu	Glu	Arg	Glu	Tyr	Ala	Asp	Leu	Glu
	450					455					460				
Glu	Ile	Trp	Lys	Ser	Glu	Lys	Ala	Glu	Val	Gln	Gly	Ser	Ala	Gln	Ile
465					470					475					480
Gln	Gln	Lys	Ile	Glu	Gln	Ala	Lys	Gln	Glu	Met	Glu	Ala	Ala	Arg	Arg
				485					490					495	
Lys	Gly	Asp	Leu	Glu	Ser	Met	Ala	Arg	Ile	Gln	Tyr	Gln	Thr	Ile	Pro
			500					505					510		
Asp	Leu	Glu	Arg	Ser	Leu	Gln	Met	Val	Asp	Gln	His	Gly	Lys	Thr	Glu
		515					520					525			
Asn	Gln	Leu	Leu	Arg	Asn	Lys	Val	Thr	Asp	Glu	Glu	Ile	Ala	Glu	Val
	530					535					540				
Val	Ser	Lys	Trp	Thr	Gly	Ile	Pro	Val	Ser	Lys	Met	Leu	Glu	Gly	Glu
545					550					555					560
Arg	Glu	Lys	Leu	Leu	Arg	Met	Glu	Gln	Glu	Leu	His	Arg	Arg	Val	Ile
				565					570					575	
Gly	Gln	Asp	Glu	Ala	Val	Val	Ala	Val	Ser	Asn	Ala	Val	Arg	Arg	Ser



			20					25				30				
Ser	Trp	Ile	Ser	Ala	Met	Pro	Ala	Ile	Cys	Ser	Arg	Ala	Ser	Gly	Ser	
		35					40					45				
Asn	Thr	Thr	Thr	Ser	Ser	Ile	Arg	Leu	Met	Asn	Ser	Gly	Arg	Lys	Cys	
	50					55				60						
Ala	Leu	Thr	Ala	Ser	Ile	Thr	Ala	Ala	Arg	Cys	Ala	Ser	Arg	Ser	Pro	
65					70					75					80	
Ala	Ser	Ser	Trp	Ile	Cys	Ala	Glu	Pro	Arg	Leu	Glu	Val	Ile	Thr	Thr	
			85					90						95		
Thr	Val	Leu	Arg	Lys	Ser	Thr	Val	Arg	Pro							
			100					105								

<210> 284

<211> 819

<212> DNA

<213> Pseudomonas aeruginosa

<400> 284

cccggaggcg	cgccgatcag	gcggggccacc	gagtgtttct	ccatgaactc	ggacatatct	60
atccgcacca	gcgcctcctc	ggtatcgaag	aggaactcgg	ccagcgcctt	gcacaactcg	120
gtcttgccca	ccccggtcgg	gccgaggaag	aggaacgagc	cgctcggccg	gttcggatcg	180
gcgaggccgg	cgcgcgaaacg	gcgcacggcg	ttggacacgg	cgactaccgc	ctcgtccttg	240
ccgatcactc	gccgatgcag	ctcctgctcc	atgcgcagca	gcttctcgcg	ctcgccctcg	300
agcatcttcg	acaccgggat	accggtccac	ttggaaacca	cttcggcgat	ttcctcgteg	360
gtcaccttgt	tgcgcagcaa	ctggttctcg	gtcttgccgt	gctggtcgac	catctgcagg	420
ctgcgttcca	ggtccgggat	ggtctggtac	tggatgcgcg	ccatgctctc	gaggtcgccc	480
ttgcgccgcg	ccgcctccat	ctcctgcttg	gcctgctcga	tcttctgctg	gatctgcgcc	540
gagccctgca	cctcggcctt	ctcggacttc	cagatctcct	cgaggtcggc	gtattcgcg	600
tcgagcttga	cgatatactc	ctccagcttg	gccaggcgct	tcctggtggc	ttcgtcgtct	660
tccttcttca	gcgcctcgcg	ctcgatcttc	agctggatca	ggcgacggtc	gagacgatcc	720
agtctctccg	gcttgagtc	gatctccatg	cggatgcggc	tggcggcctc	gtcgatcagg	780
tcgatggcct	tgtccggcag	ttgccgatcg	gtgatgtag			819

<210> 285

<211> 272

<212> PRT

<213> Pseudomonas aeruginosa

<400> 285

Pro	Gly	Gly	Ala	Pro	Ile	Arg	Arg	Ala	Thr	Glu	Cys	Phe	Ser	Met	Asn	
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Ser	Asp	Ile	Ser	Ile	Arg	Thr	Ser	Ala	Ser	Ser	Val	Ser	Lys	Arg	Asn	
			20					25					30			
Ser	Ala	Ser	Ala	Leu	His	Asn	Ser	Val	Leu	Pro	Thr	Pro	Val	Gly	Pro	
		35				40					45					
Arg	Lys	Arg	Asn	Glu	Pro	Leu	Gly	Arg	Phe	Gly	Ser	Ala	Arg	Pro	Ala	
	50					55				60						
Arg	Glu	Arg	Arg	Thr	Ala	Leu	Asp	Thr	Ala	Thr	Thr	Ala	Ser	Ser	Trp	
65				70					75						80	
Pro	Ile	Thr	Arg	Arg	Cys	Ser	Ser	Cys	Ser	Met	Arg	Ser	Ser	Phe	Ser	
			85					90						95		
Arg	Ser	Pro	Ser	Ser	Ile	Phe	Asp	Thr	Gly	Ile	Pro	Val	His	Leu	Glu	
		100						105					110			
Thr	Thr	Ser	Ala	Ile	Ser	Ser	Ser	Val	Thr	Leu	Leu	Arg	Ser	Asn	Trp	
		115					120					125				
Phe	Ser	Val	Leu	Pro	Cys	Trp	Ser	Thr	Ile	Cys	Arg	Leu	Arg	Ser	Arg	
	130					135				140						
Ser	Gly	Met	Val	Trp	Tyr	Trp	Met	Arg	Ala	Met	Leu	Ser	Arg	Ser	Pro	

145		150		155		160									
Leu	Arg	Arg	Ala	Ala	Ser	Ile	Ser	Cys	Leu	Ala	Cys	Ser	Ile	Phe	Cys
		165		170		175									
Trp	Ile	Cys	Ala	Glu	Pro	Cys	Thr	Ser	Ala	Phe	Ser	Asp	Phe	Gln	Ile
		180		185		190									
Ser	Ser	Arg	Ser	Ala	Tyr	Ser	Arg	Ser	Ser	Leu	Thr	Ile	Ser	Ser	Ser
		195		200		205									
Ser	Leu	Ala	Arg	Arg	Phe	Leu	Val	Ala	Ser	Ser	Ser	Ser	Phe	Phe	Ser
		210		215		220									
Ala	Ser	Arg	Ser	Ile	Phe	Ser	Trp	Ile	Arg	Arg	Arg	Ser	Arg	Arg	Ser
		225		230		235									
Ser	Ser	Ser	Gly	Leu	Glu	Ser	Ile	Ser	Met	Arg	Met	Arg	Leu	Ala	Ala
		245		250		255									
Ser	Ser	Ile	Arg	Ser	Met	Ala	Leu	Ser	Gly	Ser	Cys	Arg	Ser	Val	Met
		260		265		270									

<210> 286  
 <211> 564  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 286	
actcggacat atctatccgc accagcgcct cctcgggtatc gaagaggaac tcggccagcg	60
ccttgacaaa ctcggtcttg cccaccccg tccgggccgag gaagaggaac gagccgctcg	120
gccggttcgg atcggcgagg ccggcgcgcg aacggcgcac ggcgttggaac acggcgacta	180
ccgctctgct ctggccgata actcgccgat gcagctcctg ctccatgcgc agcagcttct	240
cgcgctcgcc ctcgagcatc ttcgacaccg ggataccggt ccacttgaa accacttcgg	300
cgatttcctc gtcggtcacc ttgttgcgca gcaactgggt ctcggtcttg ccgtgctggt	360
cgaccatctg caggctgcgt tccaggtccg ggatggctct gtactggatg cgcgccatgc	420
tctcgaggtc gcccttgccg cgcgccgcct ccattctcct cttggcctgc tcgatcttct	480
gctggatctg cgccgagccc tgcacctcgg ccttctcgga cttccagatc tcctcgaggt	540
cggcgtattc gcgctcgagc ttga	564

<210> 287  
 <211> 187  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 287	
Thr Arg Thr Tyr Leu Ser Ala Pro Ala Pro Pro Arg Tyr Arg Arg Gly	
1 5 10 15	
Thr Arg Pro Ala Pro Cys Thr Thr Arg Ser Cys Pro Pro Arg Ser Gly	
20 25 30	
Arg Gly Arg Gly Thr Ser Arg Ser Ala Gly Ser Asp Arg Arg Gly Arg	
35 40 45	
Arg Ala Asn Gly Ala Arg Arg Trp Thr Arg Arg Leu Pro Pro Arg Pro	
50 55 60	
Gly Arg Ser Leu Ala Asp Ala Ala Pro Ala Pro Cys Ala Ala Ser	
65 70 75 80	
Arg Ala Arg Pro Arg Ala Ser Ser Thr Pro Gly Tyr Arg Ser Thr Trp	
85 90 95	
Lys Pro Leu Arg Arg Phe Pro Arg Arg Ser Pro Cys Cys Ala Ala Thr	
100 105 110	
Gly Ser Arg Ser Cys Arg Ala Gly Arg Pro Ser Ala Gly Cys Val Pro	
115 120 125	
Gly Pro Gly Trp Ser Gly Thr Gly Cys Ala Pro Cys Ser Arg Gly Arg	
130 135 140	
Pro Cys Ala Ala Pro Pro Pro Ser Pro Ala Trp Pro Ala Arg Ser Ser	

145		150		155		160
Ala Gly Ser Ala Pro	Ser Pro Ala Pro	Arg Pro Ser Arg Thr	Ser Arg			
	165	170	175			
Ser Pro Arg Gly Arg Arg Ile Arg	Ala Arg Ala					
	180	185				

<210> 288  
 <211> 306  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 288  
 agaaggaaga cgacgaagcc accaggaagc gcctggccaa gctggaggag gatatcgtca 60  
 agctcgagcg cgaatacgcc gacctcgagg agatctggaa gtccgagaag gccgaggtgc 120  
 agggctcggc gcagatccag cagaagatcg agcaggccaa gcaggagatg gaggcggcgc 180  
 ggcgcaaggg cgacctcgag agcatggcgc gcatccagta ccagaccatc ccggacctgg 240  
 aacgcagcct gcagatggtc gaccagcacg gcaagaccga gaaccagttg ctgcgcaaca 300  
 aggtga 306

<210> 289  
 <211> 101  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 289  
 Arg Arg Lys Thr Thr Lys Pro Pro Gly Ser Ala Trp Pro Ser Trp Arg  
 1 5 10 15  
 Arg Ile Ser Ser Ser Ser Ser Ala Asn Thr Pro Thr Ser Arg Arg Ser  
 20 25 30  
 Gly Ser Pro Arg Arg Pro Arg Cys Arg Ala Arg Arg Arg Ser Ser Arg  
 35 40 45  
 Arg Ser Ser Arg Pro Ser Arg Arg Trp Arg Arg Arg Gly Ala Arg Ala  
 50 55 60  
 Thr Ser Arg Ala Trp Arg Ala Ser Ser Thr Arg Pro Ser Arg Thr Trp  
 65 70 75 80  
 Asn Ala Ala Cys Arg Trp Ser Thr Ser Thr Ala Arg Pro Arg Thr Ser  
 85 90 95  
 Cys Cys Ala Thr Arg  
 100

<210> 290  
 <211> 312  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 290  
 aggcggtcct caacgaactg ggcaagcagg aaggccgggt catcctgttc atcgacgaac 60  
 tgcacaccat ggtcggcgcc ggcaaggcgg aaggtgccat ggacgccggc aacatgctca 120  
 agccggctct ggcgcgcgcc gagctgcact gcgtcggtgc tactaccctc gacgagtatc 180  
 gccagtacat cgagaaggat gccgcgctgg agcgcgcgtt ccagaagggtg ctggtggacg 240  
 aaccgagcga ggaagacacc atcgccatcc tccgtggcct caaggaacgc tatgaagtgc 300  
 accacggggt ga 312

<210> 291  
 <211> 103  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 291  
 Arg Arg Ser Ser Thr Asn Trp Ala Ser Arg Lys Ala Gly Ser Ser Cys  
 1 5 10 15  
 Ser Ser Thr Asn Cys Thr Pro Trp Ser Ala Pro Ala Arg Arg Lys Val  
 20 25 30  
 Pro Trp Thr Pro Ala Thr Cys Ser Ser Arg Leu Trp Arg Ala Ala Ser  
 35 40 45  
 Cys Thr Ala Ser Val Leu Leu Pro Ser Thr Ser Ile Ala Ser Thr Ser  
 50 55 60  
 Arg Arg Met Pro Arg Trp Ser Ala Ala Ser Arg Arg Cys Trp Trp Thr  
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 Asn Arg Ala Arg Lys Thr Pro Ser Pro Ser Ser Val Ala Ser Arg Asn  
 85 90 95  
 Ala Met Lys Cys Thr Thr Gly  
 100

<210> 292  
 <211> 789  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 292  
 ccgcctggcc cagcagaagg gcgaccagtt catctccagc gagctggtat tgctggccgc 60  
 gatggacgag aacaccaggc tcggcaagct gctgctcggc cagggcgtgt cgcgcaaggc 120  
 gctggagaat gccgtggcca acctgcgtgg cggcgaagcg gtgaacgacc cgaacgtcga 180  
 ggagtcgcgc caggcgctgg acaagtacac cgtcgacatg accaagcgcg ccgaggaagg 240  
 caagctcgac ccggtgatcg gtcgcgacga cgagatccgc cggaccatcc aggtcctgca 300  
 gcggcggacc aagaacaacc cggtgctgat cggcgaacct gccgtcggca agaccgccat 360  
 cgtcgagggc ctggcccagc gcatcatcaa cggcgaagtgc ccggacggcc tcaaggacaa 420  
 gcgcctgctg gccctggaca tgggggcgct gatcgccggt gccaaagttcc gcggcgagtt 480  
 cgaggaacgc ctgaaggcgg tcctcaacga actgggcaag caggaaggcc gggtcactct 540  
 gttcatcgac gaactgcaca ccatggtcgg cgccggcaag gcggaagggtg ccatggacgc 600  
 cggcaacatg ctcaagccgg ctctggcgcg cggcgagctg cactgcgtcg gtgctactac 660  
 cctcgacgag tatcgccagt acatcgagaa ggatgccgcg ctggagcgcc gcttccagaa 720  
 ggtgctggtg gacgaaccga gcgaggaaga caccatcgcc atcctccgtg gcctcaagga 780  
 acgctatga 789

<210> 293  
 <211> 262  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 293  
 Pro Pro Gly Pro Ala Glu Gly Arg Pro Val His Leu Gln Arg Ala Gly  
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 Ile Ala Gly Arg Asp Gly Arg Glu His Gln Ala Arg Gln Ala Ala Ala  
 20 25 30  
 Arg Pro Gly Arg Val Ala Gln Gly Ala Gly Glu Cys Arg Gly Gln Pro  
 35 40 45  
 Ala Trp Arg Arg Ser Gly Glu Arg Pro Glu Arg Arg Gly Val Ala Pro  
 50 55 60  
 Gly Ala Gly Gln Val His Arg Arg His Asp Gln Ala Arg Arg Gly Arg  
 65 70 75 80  
 Gln Ala Arg Pro Gly Asp Arg Ser Arg Arg Arg Asp Pro Pro Asp His  
 85 90 95  
 Pro Gly Pro Ala Ala Ala Asp Gln Glu Gln Pro Gly Ala Asp Arg Arg  
 100 105 110  
 Thr Arg Arg Arg Gln Asp Arg His Arg Arg Gly Pro Gly Pro Ala His

	115					120					125						
His	Gln	Arg	Arg	Ser	Ala	Gly	Arg	Pro	Gln	Gly	Gln	Ala	Pro	Ala	Gly		
	130					135					140						
Pro	Gly	His	Gly	Gly	Ala	Asp	Arg	Arg	Cys	Gln	Val	Pro	Arg	Arg	Val		
145					150					155					160		
Arg	Gly	Thr	Pro	Glu	Gly	Gly	Pro	Gln	Arg	Thr	Gly	Gln	Ala	Gly	Arg		
				165					170					175			
Pro	Gly	His	Pro	Val	His	Arg	Arg	Thr	Ala	His	His	Gly	Arg	Arg	Arg		
			180					185					190				
Gln	Gly	Gly	Arg	Cys	His	Gly	Arg	Arg	Gln	His	Ala	Gln	Ala	Gly	Ser		
	195					200					205						
Gly	Ala	Arg	Arg	Ala	Ala	Leu	Arg	Arg	Cys	Tyr	Tyr	Pro	Arg	Arg	Val		
	210					215				220							
Ser	Pro	Val	His	Arg	Glu	Gly	Cys	Arg	Ala	Gly	Ala	Pro	Leu	Pro	Glu		
225					230					235					240		
Gly	Ala	Gly	Gly	Arg	Thr	Glu	Arg	Gly	Arg	His	His	Arg	His	Pro	Pro		
				245				250						255			
Trp	Pro	Gln	Gly	Thr	Leu												
			260														

<210> 294  
 <211> 1116  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 294																	
cgttccttga	ggccacggag	gatggcgatg	gtgtcttctc	cgctcggttc	gtccaccagc											60	
accttctgga	agcggcgctc	cagcgcgga	tccttctcga	tgtactggcg	atactcgtcg											120	
agggtagtag	caccgacgca	gtgcagctcg	ccgcgcgcca	gagccggctt	gagcatgttg											180	
ccggcggtcca	tggcaccttc	cgcttggccg	gcgcgcacca	tgggtgtgcag	ttcgtcgtatg											240	
aacaggatga	cccgcccttc	ctgcttgccc	agttcgttga	ggaccgcctt	caggcgttcc											300	
tcgaactcgc	cgcggaactt	ggcaccggcg	atcagcgccc	ccatgtccag	ggccagcagg											360	
cgcttgtcct	tgaggccgtc	cggcacttcg	ccgttgatga	tgcgctgggc	caggccctcg											420	
acgatggcgg	tcttgccgac	gccgggttcg	ccgatcagca	ccgggttggt	cttgggtccgc											480	
cgctgcagga	cctggatggt	ccggcggatc	tcgtcgtcgc	gaccgatcac	cgggtcgagc											540	
ttgccttctc	cggcgcgctt	ggtcatgtcg	acgggtgtact	tgtccagcgc	ctggcgcgac											600	
tcctcgacgt	tcgggtcggt	caccgcttcg	ccgccacgca	ggttggccac	ggcattctcc											660	
agcgccttgc	gcgacacgcc	ctggccgagc	agcagcttgc	cgagcctggt	gttctcgtcc											720	
atcgcgcca	gcaataccag	ctcgtctggag	atgaactggt	cgcccttctg	ctgggcccagg											780	
cggtcagcct	ggttgagcag	gcgtgcgaga	tcctgggaca	ggttcacgtc	gccggtcggg											840	
ctctggatct	tcggcagcgc	gtcagagttct	ttgttgaggc	cgctgcgcag	ggcggcgata											900	
tcgaagccga	cctgcatcag	caggggcttg	atcgaaccgc	cttgctgctc	gagcagggcg											960	
gaaagcaggt	gcaccggctc	gatggccgga	tggtcatggc	caacggccag	ggactgggcg											1020	
tcggagagcg	ccagttgcag	cttgctggtc	aaacggtcta	ttcgcagggg	tcgtccttcc											1080	
ttctatagag	cgggcccggaa	cgatgggtgt	ccctga													1116	

<210> 295  
 <211> 371  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 295																	
Arg	Ser	Leu	Arg	Pro	Arg	Arg	Met	Ala	Met	Val	Ser	Ser	Ser	Leu	Gly		
1				5				10						15			
Ser	Ser	Thr	Ser	Thr	Phe	Trp	Lys	Arg	Arg	Ser	Ser	Ala	Ala	Ser	Phe		
			20				25						30				
Ser	Met	Tyr	Trp	Arg	Tyr	Ser	Ser	Arg	Val	Val	Ala	Pro	Thr	Gln	Cys		
	35					40					45						

Ser Ser Pro Arg Ala Arg Ala Gly Leu Ser Met Leu Pro Ala Ser Met  
 50 55 60  
 Ala Pro Ser Ala Leu Pro Ala Pro Thr Met Val Cys Ser Ser Ser Met  
 65 70 75 80  
 Asn Arg Met Thr Arg Pro Ser Cys Leu Pro Ser Ser Leu Arg Thr Ala  
 85 90 95  
 Phe Arg Arg Ser Ser Asn Ser Pro Arg Asn Leu Ala Pro Ala Ile Ser  
 100 105 110  
 Ala Pro Met Ser Arg Ala Ser Arg Arg Leu Ser Leu Arg Pro Ser Gly  
 115 120 125  
 Thr Ser Pro Leu Met Met Arg Trp Ala Arg Pro Ser Thr Met Ala Val  
 130 135 140  
 Leu Pro Thr Pro Gly Ser Pro Ile Ser Thr Gly Leu Phe Leu Val Arg  
 145 150 155 160  
 Arg Cys Arg Thr Trp Met Val Arg Arg Ile Ser Ser Ser Arg Pro Ile  
 165 170 175  
 Thr Gly Ser Ser Leu Pro Ser Ser Ala Arg Leu Val Met Ser Thr Val  
 180 185 190  
 Tyr Leu Ser Ser Ala Trp Arg Asp Ser Ser Thr Phe Gly Ser Phe Thr  
 195 200 205  
 Ala Ser Pro Pro Arg Arg Leu Ala Thr Ala Phe Ser Ser Ala Leu Arg  
 210 215 220  
 Asp Thr Pro Trp Pro Ser Ser Ser Leu Pro Ser Leu Val Phe Ser Ser  
 225 230 235 240  
 Ile Ala Ala Ser Asn Thr Ser Ser Leu Glu Met Asn Trp Ser Pro Phe  
 245 250 255  
 Cys Trp Ala Arg Arg Ser Ala Trp Leu Ser Arg Arg Ala Arg Ser Trp  
 260 265 270  
 Asp Arg Phe Thr Ser Pro Val Gly Leu Trp Ile Phe Gly Ser Ala Ser  
 275 280 285  
 Ser Ser Leu Leu Arg Pro Leu Arg Arg Ala Ala Ile Ser Lys Pro Thr  
 290 295 300  
 Cys Ile Ser Arg Gly Leu Ile Glu Pro Pro Cys Cys Ser Ser Arg Ala  
 305 310 315 320  
 Glu Ser Arg Cys Thr Gly Ser Met Ala Gly Trp Ser Trp Pro Thr Ala  
 325 330 335  
 Arg Asp Trp Ala Ser Glu Ser Ala Ser Cys Ser Leu Leu Val Lys Arg  
 340 345 350  
 Ser Ile Arg Met Gly Arg Pro Ser Phe Tyr Arg Ala Gly Arg Asn Asp  
 355 360 365  
 Gly Cys Pro  
 370

<210> 296  
 <211> 354  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 296  
 tgcgctgggc caggccctcg acgatggcgg tcttgccgac gccggggttcg cccgatcagca 60  
 ccgggttggt cttggtccgc cgctgcagga cctggatggc ccggcggatc tcgtcgtcgc 120  
 gaccgatcac cgggtcgcgc ttgccttcct cggcgcgctt ggtcatgtcg acggtgtact 180  
 tgtccagcgc ctggcgcgac tcctcgacgt tcgggtcggt caccgcttcg ccgccacgca 240  
 ggttggccac ggcattctcc agcgccttgc gcgacacgcc ctggccgagc agcagcttgc 300  
 cgagcctggc gttctcgtcc atcgcgcca gcaataccag ctcgctggag atga 354

<210> 297  
 <211> 117

<212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 297  
 Cys Ala Gly Pro Gly Pro Arg Arg Trp Arg Ser Cys Arg Arg Arg Val  
 1 5 10 15  
 Arg Arg Ser Ala Pro Gly Cys Ser Trp Ser Ala Ala Ala Gly Pro Gly  
 20 25 30  
 Trp Ser Gly Gly Ser Arg Arg Arg Asp Arg Ser Pro Gly Arg Ala Cys  
 35 40 45  
 Leu Pro Arg Arg Ala Trp Ser Cys Arg Arg Cys Thr Cys Pro Ala Pro  
 50 55 60  
 Gly Ala Thr Pro Arg Arg Ser Gly Arg Ser Pro Leu Arg Arg His Ala  
 65 70 75 80  
 Gly Trp Pro Arg His Ser Pro Ala Pro Cys Ala Thr Arg Pro Gly Arg  
 85 90 95  
 Ala Ala Ala Cys Arg Ala Trp Cys Ser Arg Pro Ser Arg Pro Ala Ile  
 100 105 110  
 Pro Ala Arg Trp Arg  
 115

<210> 298  
 <211> 513  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 298  
 ccgcccactg cctgccggcg ttgttctgcg accgctcggg caccggggtg gccgcggccc 60  
 atgccggctg gcgcgggctg gcggcgggcg tgctggaggc gacggtggac agcctgggag 120  
 tgcccggcga cgaactgctg gtctggctgg ggccggcgat cggcccgcag gccttcgagg 180  
 tcggcggcga ggtccgcgat gcattcgtcg ctgcgcacgc cgaggcgcg tcggctttcg 240  
 tacctagcgc caatccgggc cgcttcatgg ccgacatcta ccgactcgcg cggatccgcc 300  
 tgggcgcccc tggcgtcacc gccgtgcatg gcggcggtt ctgcaccttc agcgataccg 360  
 cgcgcttcta ttcctaccgc cgctcgtcgc gtaccggcgg ttttgccagc ctgggtctggc 420  
 tccaggacta ggcccgcga ggttatccgg cggcaactga ccgatgtcac ggtccggctcg 480  
 cttgaaccgc ggaaaatcgc ccttatctac tga 513

<210> 299  
 <211> 170  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 299  
 Pro Pro Thr Ala Cys Arg Arg Cys Ser Ala Thr Ala Arg Ala Pro Gly  
 1 5 10 15  
 Trp Pro Arg Pro Met Pro Ala Gly Ala Gly Trp Arg Arg Ala Cys Trp  
 20 25 30  
 Arg Arg Arg Trp Thr Ala Trp Ala Cys Pro Ala Thr Asn Cys Trp Ser  
 35 40 45  
 Gly Trp Gly Arg Arg Ser Ala Arg Arg Pro Ser Arg Ser Ala Ala Arg  
 50 55 60  
 Ser Ala Met His Ser Ser Leu Arg Thr Pro Arg Arg Ala Arg Leu Ser  
 65 70 75 80  
 Tyr Leu Ala Pro Ile Arg Ala Ala Ser Trp Pro Thr Ser Thr Asp Ser  
 85 90 95  
 Arg Gly Ser Ala Trp Ala Pro Met Ala Ser Pro Pro Cys Met Ala Ala  
 100 105 110  
 Ala Ser Ala Pro Ser Ala Ile Pro Arg Ala Ser Ile Pro Thr Ala Ala

	115					120					125						
Arg	Arg	Val	Pro	Ala	Val	Leu	Pro	Ala	Trp	Ser	Gly	Ser	Arg	Thr	Arg		
	130					135					140						
Pro	Ala	Gln	Val	Ile	Arg	Arg	Gln	Leu	Thr	Asp	Val	Thr	Val	Arg	Ser		
145					150					155					160		
Leu	Glu	Pro	Arg	Lys	Ile	Ala	Leu	Ile	Tyr								
				165					170								

<210> 300  
 <211> 726  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 300  
 ataagggcga ttttccgcgg ttcaagcgac cggaccgtga catcgggtcag ttgccgccgg 60  
 ataacctgcg cgggcctagt cctggagcca gaccaggctg gcaaaacggc cgggtacgcga 120  
 cgagcggcgg taggaataga agcgcgcggg atcgcgtgaag gtgcagaagc cgccgccatg 180  
 cacggcgggtg acgccatggg cgcccaggcg gatccgcgcg agtcggtaga tgtcggccat 240  
 gaagcggccc ggattggcgc taggtacgaa agccgagcgc gcctcggcgt gcgcagcgac 300  
 gaatgcatcg cggacctcgc cgccgacctc gaaggcctgc gggccgatcg ccggccccag 360  
 ccagaccagc agttcgtcgc cgggcacgcc caggctgtcc accgtcgcct ccagcacgcc 420  
 cgccgccagc ccgcgccagc cggcatgggc cgcgccacc cgggtgcccg agcggtcgca 480  
 gaacaacgcc ggcaggcagt cggcggtcac gatcgtacag gcgacgcccg gcatcgcgct 540  
 ccagctggcg tcggccctga gcaccggttc gggtcggcct ccaccacgct actccgtgca 600  
 cctattccaa ccagctcggc cggcattcca gacgctcggg caggcgctcg cggttttatt 660  
 ccacggcgcg cggatcgctg tagacgtggg cgccaaggtt cagactgtcg aagggtgcct 720  
 ggctga 726

<210> 301  
 <211> 241  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 301  
 Ile Arg Ala Ile Phe Arg Gly Ser Ser Asp Arg Thr Val Thr Ser Val  
 1 5 10 15  
 Ser Cys Arg Arg Ile Thr Cys Ala Gly Leu Val Leu Glu Pro Asp Gln  
 20 25 30  
 Ala Gly Lys Thr Ala Gly Thr Arg Arg Ala Ala Val Gly Ile Glu Ala  
 35 40 45  
 Arg Gly Ile Ala Glu Gly Ala Glu Ala Ala Met His Gly Gly Asp  
 50 55 60  
 Ala Met Gly Ala Gln Ala Asp Pro Arg Glu Ser Val Asp Val Gly His  
 65 70 75 80  
 Glu Ala Ala Arg Ile Gly Ala Arg Tyr Glu Ser Arg Ala Arg Leu Gly  
 85 90 95  
 Val Arg Ser Asp Glu Cys Ile Ala Asp Leu Ala Ala Asp Leu Glu Gly  
 100 105 110  
 Leu Arg Ala Asp Arg Arg Pro Gln Pro Asp Gln Gln Phe Val Ala Gly  
 115 120 125  
 His Ala Gln Ala Val His Arg Arg Leu Gln His Ala Arg Arg Gln Pro  
 130 135 140  
 Ala Pro Ala Gly Met Gly Arg Gly His Pro Gly Ala Arg Ala Val Ala  
 145 150 155 160  
 Glu Gln Arg Arg Gln Ala Val Gly Gly His Asp Arg Thr Gly Asp Ala  
 165 170 175  
 Arg His Arg Ala Pro Ala Gly Val Gly Pro Glu His Arg Phe Gly Ser  
 180 185 190

Ala Ser Thr Thr Ser Leu Arg Ala Pro Ile Pro Thr Ser Ser Ala Gly  
195 200 205  
Ile Pro Asp Ala Arg Ser Gly Val Gly Gly Phe Ile Pro Arg Arg Ala  
210 215 220  
Asp Arg Arg Arg Arg Gly Arg Gln Gly Ser Asp Cys Arg Arg Val Pro  
225 230 235 240  
Gly

<210> 302  
<211> 513  
<212> DNA  
<213> *Pseudomonas aeruginosa*

<400> 302  
cgtggtggag gccgacccga accggtgctc agggccgacg ccagctggag cgcgatgccg 60  
ggcgtcgcct gtacgatcat gaccgccgac tgcctgccgg cgttggtctg cgaccgctcg 120  
ggcaccggg tggccgcggc ccatgccggc tggcgcgggc tggcggcggg cgtgctggag 180  
gcgacggtgg acagcctggg cgtgcccggc gacgaactgc tggctctggct ggggccggcg 240  
atcgcccgcg aggccttcga ggtcggcgcc gaggtccgcg atgcattcgt cgctgcgcac 300  
gccgaggcg gctcggcttt cgtacctagc gccaatccgg gccgcttcat ggccgacatc 360  
taccgactcg cgcggatccg cctgggcgcc catggcgctca ccgccgtgca tggcggcggc 420  
ttctgcacct tcagcgatac cgcgcgcttc tattcctacc gccgctcgtc gcgtaccggc 480  
cgttttgcca gcctggtctg gctccaggac tag 513

<210> 303  
<211> 170  
<212> PRT  
<213> *Pseudomonas aeruginosa*

<400> 303  
Arg Gly Gly Gly Arg Pro Glu Pro Val Leu Arg Ala Asp Ala Ser Trp  
1 5 10 15  
Ser Ala Met Pro Gly Val Ala Cys Thr Ile Met Thr Ala Asp Cys Leu  
20 25 30  
Pro Ala Leu Phe Cys Asp Arg Ser Gly Thr Arg Val Ala Ala Ala His  
35 40 45  
Ala Gly Trp Arg Gly Leu Ala Ala Gly Val Leu Glu Ala Thr Val Asp  
50 55 60  
Ser Leu Gly Val Pro Gly Asp Glu Leu Leu Val Trp Leu Gly Pro Ala  
65 70 75 80  
Ile Gly Pro Gln Ala Phe Glu Val Gly Gly Glu Val Arg Asp Ala Phe  
85 90 95  
Val Ala Ala His Ala Glu Ala Arg Ser Ala Phe Val Pro Ser Ala Asn  
100 105 110  
Pro Gly Arg Phe Met Ala Asp Ile Tyr Arg Leu Ala Arg Ile Arg Leu  
115 120 125  
Gly Ala His Gly Val Thr Ala Val His Gly Gly Gly Phe Cys Thr Phe  
130 135 140  
Ser Asp Thr Ala Arg Phe Tyr Ser Tyr Arg Arg Ser Ser Arg Thr Gly  
145 150 155 160  
Arg Phe Ala Ser Leu Val Trp Leu Gln Asp  
165 170

<210> 304  
<211> 675  
<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 304

atgtcggcca	tgaagcggcc	cggattggcg	ctaggtacga	aagccgagcg	cgcctcggcg	60
tgcgcagcga	cgaatgcatc	gcggacctcg	ccgccgacct	cgaaggcctg	cgggccgatc	120
gccggcccca	gccagaccag	cagttcgtcg	ccgggcacgc	ccaggctgtc	caccgtcgcc	180
tccagcacgc	ccgccgccag	cccgcgccag	ccggcatggg	ccgcggccac	ccgggtgccc	240
gagcggtcgc	agaacaacgc	cggcaggcag	tcggcgggtca	tgatcgtaca	ggcgacgccc	300
ggcatcgcg	tccagctggc	gtcggccctg	agcaccgggt	cgggtcggcc	tccaccacgt	360
cactccgtgc	acctattcca	accagctcgg	ccggcattcc	agacgctcgg	tcaggcgtcg	420
gcggttttat	tccacggcgc	gcggatcgtc	gtagacgtgg	gcgccaaggt	tcagactgtc	480
gaagggtgcc	tggctgacct	cgccactgcg	cgtgggtcacg	caggcccgcg	cacgggcccgg	540
cgcgggccag	tcgggggtca	gccaggcggt	caaccgacga	acgcctcgcg	atcctggcgc	600
aacaggctga	gcagggagag	gaattcttcc	ggcagcggcg	attcccactt	catgcgcacg	660
ccggtggccg	ggtga					675

<210> 305

<211> 224

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 305

Met	Ser	Ala	Met	Lys	Arg	Pro	Gly	Leu	Ala	Leu	Gly	Thr	Lys	Ala	Glu
1				5				10					15		
Arg	Ala	Ser	Ala	Cys	Ala	Ala	Thr	Asn	Ala	Ser	Arg	Thr	Ser	Pro	Pro
		20						25					30		
Thr	Ser	Lys	Ala	Cys	Gly	Pro	Ile	Ala	Gly	Pro	Ser	Gln	Thr	Ser	Ser
		35					40					45			
Ser	Ser	Pro	Gly	Thr	Pro	Arg	Leu	Ser	Thr	Val	Ala	Ser	Ser	Thr	Pro
		50				55					60				
Ala	Ala	Ser	Pro	Arg	Gln	Pro	Ala	Trp	Ala	Ala	Ala	Thr	Arg	Val	Pro
65					70				75						80
Glu	Arg	Ser	Gln	Asn	Asn	Ala	Gly	Arg	Gln	Ser	Ala	Val	Met	Ile	Val
				85				90					95		
Gln	Ala	Thr	Pro	Gly	Ile	Ala	Leu	Gln	Leu	Ala	Ser	Ala	Leu	Ser	Thr
			100					105					110		
Gly	Ser	Gly	Arg	Pro	Pro	Pro	Arg	His	Ser	Val	His	Leu	Phe	Gln	Pro
		115					120					125			
Ala	Arg	Pro	Ala	Phe	Gln	Thr	Leu	Gly	Gln	Ala	Ser	Ala	Val	Leu	Phe
		130				135					140				
His	Gly	Ala	Arg	Ile	Val	Val	Asp	Val	Gly	Ala	Lys	Val	Gln	Thr	Val
145					150				155						160
Glu	Gly	Cys	Leu	Ala	Asp	Pro	Ala	Thr	Ala	Arg	Gly	His	Ala	Gly	Pro
				165					170					175	
His	Thr	Gly	Arg	Arg	Arg	Pro	Val	Gly	Gly	Gln	Pro	Gly	Val	Gln	Pro
			180					185					190		
Thr	Asn	Ala	Ser	Arg	Ser	Trp	Arg	Asn	Arg	Leu	Ser	Ser	Gln	Arg	Asn
		195					200					205			
Ser	Ser	Gly	Ser	Gly	Asp	Ser	His	Phe	Met	Arg	Thr	Pro	Val	Ala	Gly
		210				215					220				

<210> 306

<211> 342

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 306

gtgcacggag	tgacgtggtg	gaggccgacc	cgaaccgggtg	ctcaggggccg	acgccagctg	60
------------	------------	------------	-------------	-------------	------------	----

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gagcgcgatg cccggcgctcg cctgtacgat catgaccgcc gactgcctgc cggcggttgtt 120
ctgcgaccgc tcgggcaccc ggggtggccgc ggcccatgcc ggctggcgcg ggctggcgcg 180
ggcggtgctg gaggcgacgg tggacagcct gggcggtgcc ggcgacgaac tgctggtctg 240
gctggggccg gcgatcgcc cgcaggcctt cgaggtcggc ggcgaggtcc gcgatgcatt 300
cgtcgctgcg cacgccgagg cgcgctcggc tttcgtacct ag 342

```

<210> 307  
 <211> 113  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

```

<400> 307
Val His Gly Val Thr Trp Trp Arg Pro Thr Arg Thr Gly Ala Gln Gly
 1          5          10          15
Arg Arg Gln Leu Glu Arg Asp Ala Gly Arg Arg Leu Tyr Asp His Asp
          20          25          30
Arg Arg Leu Pro Ala Gly Val Val Leu Arg Pro Leu Gly His Pro Gly
          35          40          45
Gly Arg Gly Pro Cys Arg Leu Ala Arg Ala Gly Gly Gly Arg Ala Gly
          50          55          60
Gly Asp Gly Gly Gln Pro Gly Arg Ala Arg Arg Arg Thr Ala Gly Leu
65          70          75          80
Ala Gly Ala Gly Asp Arg Pro Ala Gly Leu Arg Gly Arg Arg Arg Gly
          85          90          95
Pro Arg Cys Ile Arg Arg Cys Ala Arg Arg Gly Ala Leu Gly Phe Arg
          100          105          110
Thr

```

<210> 308  
 <211> 372  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

```

<400> 308
agtgggaatc gccgctgccg gaagaattcc tctggctgct cagcctgttg cgccaggatc 60
gcgaggcggt cgtcggttga acgectggct gacccccgac tggccggcgcg cggcccggtg 120
gccccgctgc gtgaccacgc gcagtggcgg ggctcagccag gcacccttcg acagtctgaa 180
ccttggcgcc cacgtctacg acgatccgcg cgccgtggaa taaaaccgcc gacgcctgac 240
cgagcgtctg gaatgccggc cgagctggtt ggaatagggt cacggagtga cgtgggtggag 300
gccgaccgca accggtgctc agggccgacg ccagctggag cgcgatgccg ggcgtcgct 360
gtacgatcat ga 372

```

<210> 309  
 <211> 123  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

```

<400> 309
Ser Gly Asn Arg Arg Cys Arg Lys Asn Ser Ser Gly Cys Ser Ala Cys
 1          5          10          15
Cys Ala Arg Ile Ala Arg Arg Ser Ser Val Glu Arg Leu Ala Asp Pro
          20          25          30
Arg Leu Ala Gly Ala Gly Pro Cys Ala Gly Leu Arg Asp His Ala Gln
          35          40          45
Trp Arg Gly Gln Pro Gly Thr Leu Arg Gln Ser Glu Pro Trp Arg Pro
          50          55          60
Arg Leu Arg Arg Ser Ala Arg Arg Gly Ile Lys Pro Pro Thr Pro Asp

```

65					70					75					80
Arg	Ala	Ser	Gly	Met	Pro	Ala	Glu	Leu	Val	Gly	Ile	Gly	Ala	Arg	Ser
				85					90					95	
Asp	Val	Val	Glu	Ala	Asp	Pro	Asn	Arg	Cys	Ser	Gly	Pro	Thr	Pro	Ala
			100					105					110		
Gly	Ala	Arg	Cys	Arg	Ala	Ser	Pro	Val	Arg	Ser					
		115					120								

<210> 310  
 <211> 819  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 310																			
caagcccgcc	ggcctggtgg	tccatccggc	tgccggccat	caggacggca	ccctgctgaa														60
tgccttgctc	taccatgtcc	cggacatcgc	caatgtgccg	cgcgccggga	tcgtccaccg														120
cctggacaag	gacacgaccg	gcctgatggt	agtggccaag	acgctggagg	cccacaccaa														180
gctggtggcg	caactgcagg	cacggtcggc	cagccgcatac	tacgaggcga	tcgtgatcgg														240
cgtgatcacc	tccggcggca	ccatcgatgc	gccgatcggga	cggcatggcg	tgacgcggca														300
gaagatggcg	gtggtcgacg	ccggcaaggt	ggcggtcagc	cattaccgcg	tgctggaacg														360
cttccgtgcg	cacacccata	cccgggtcaa	gctggagacc	gggcgtaccc	accagatccg														420
cgtgcacatg	agccatattg	gctatcccct	ggtcggcgat	ccggtctacg	gtgggcgctt														480
caggattccc	ccggtggcca	gccagaccct	ggtccagact	cttcgcgaat	tcccccgcca														540
ggcgtgacac	gcgcgcttcc	tcgaactgga	tcacccggcc	accggcggtgc	gcatgaagtgc														600
ggaatcgccg	ctgccgggaag	aattcctctg	gctgctcagc	ctgttgccgc	aggatcgcca														660
ggcgttcgtc	ggttgaacgc	ctggctgacc	cccgaactggc	cggcgccggc	ccgtgtgcgg														720
gcctgcgtga	ccacgcgcag	tggcggggtc	agccaggcac	ccttcgacag	tctgaacctt														780
ggcgcacacg	tctacgacga	tccgcgcgcc	gtggaataa																819

<210> 311  
 <211> 272  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 311																			
Gln	Ala	Arg	Arg	Pro	Gly	Gly	Pro	Ser	Gly	Cys	Arg	Pro	Ser	Gly	Arg				
1				5					10					15					
His	Pro	Ala	Glu	Cys	Leu	Ala	Leu	Pro	Cys	Pro	Gly	His	Arg	Gln	Cys				
			20					25					30						
Ala	Ala	Arg	Arg	Asp	Arg	Pro	Pro	Pro	Gly	Gln	Gly	His	Asp	Arg	Pro				
		35				40				45									
Asp	Gly	Ser	Gly	Gln	Asp	Ala	Gly	Gly	Pro	His	Gln	Ala	Gly	Gly	Ala				
	50				55					60									
Thr	Ala	Gly	Thr	Val	Gly	Gln	Pro	His	Leu	Arg	Gly	Asp	Arg	Asp	Arg				
65					70				75					80					
Arg	Asp	His	Leu	Arg	Arg	His	His	Arg	Cys	Ala	Asp	Arg	Thr	Ala	Trp				
			85					90					95						
Arg	Ala	Ala	Ala	Glu	Asp	Gly	Gly	Gly	Arg	Arg	Arg	Gln	Gly	Gly	Gly				
		100					105					110							
Gln	Pro	Leu	Pro	Arg	Ala	Gly	Thr	Leu	Pro	Cys	Ala	His	Pro	Tyr	Pro				
	115					120					125								
Gly	Gln	Ala	Gly	Asp	Arg	Ala	Tyr	Pro	Pro	Asp	Pro	Arg	Ala	His	Glu				
	130				135				140										
Pro	Tyr	Trp	Leu	Ser	Pro	Gly	Arg	Arg	Ser	Gly	Leu	Arg	Trp	Ala	Leu				
145				150				155						160					
Gln	Asp	Ser	Pro	Gly	Gly	Gln	Pro	Asp	Pro	Gly	Pro	Asp	Ser	Ser	Arg				
			165				170					175							
Ile	Pro	Pro	Ala	Gly	Ala	Ala	Arg	Ala	Leu	Pro	Arg	Thr	Gly	Ser	Pro				



	115		120		125
Glu	Ala Phe Gln His Ala Val	Met Ala Asp Arg	His Leu Ala Gly Val		
130		135	140		
Asp	His Arg His Leu Leu Pro	Leu His Ala Met	Pro Ser Asp Arg Arg		
145		150	155		160
Ile	Asp Gly Ala Ala Gly Gly	Asp His Ala Asp	His Asp Arg Leu Val		
	165	170	175		
Asp	Ala Ala Asp Arg Pro Cys	Leu Gln Leu Arg	His Gln Leu Gly Val		
	180	185	190		
Gly	Leu Gln Arg Leu Gly His	Tyr His Gln Ala Gly	Arg Val Leu Val		
	195	200	205		
Gln	Ala Val Asp Asp Pro Gly	Ala Arg His Ile Gly	Asp Val Arg Asp		
	210	215	220		
Met	Val Glu Gln Gly Ile Gln	Gln Gly Ala Val	Leu Met Ala Gly Ser		
225		230	235		240
Arg	Met Asp His Gln Ala Gly	Gly Gly Leu Val	Asn His Gln Asp Val	Leu	
	245	250	255		
Val	Leu Val Asp Asp Phe Gln	Leu Asp Val Leu Cys	Glu Pro Leu Ala		
	260	265	270		
Leu	Gly Phe Leu Leu Gly Leu	Gln Asp Gln Leu Arg	Ala Ala Val Asp		
	275	280	285		
Asp	Val Ala Arg Ala Gln His	Gly Ala Val Asp	Gly Gln Ala Thr Val		
	290	295	300		
Leu	Asp Pro Ala Gly Gln Thr	Gly Ala Gly Val	Phe Gly Lys Lys Leu		
305		310	315		320
Gly	Gly Asp Leu Val Glu Thr	Leu Ala Thr Gln	Leu Glu Arg His Leu		
	325	330	335		
Gly	Arg Ala Leu Asn His Ile	Gly His Glu			
	340	345			

<210> 314  
 <211> 1014  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 314	
ccacagcgcg tagccgattc caaaagccgc gctgagcatc gtctcctact catgtccgat	60
atgattcaac gcgcggccga ggtgccgttc gagctgggtg gccagcgtct cgaccagatc	120
gccgcccagc tttttccga acactcccgc tcccgtctgg ccggctggat caaggacggt	180
cgcctgaccg tcgacggcgc cgtgctgctg ccgcgcgaca tcgtccacag cggcgcgcaa	240
ctggtcctgg aggcggagca ggaagcccag ggcgagtggc tcgcacagga catcgagctg	300
gaaatcgtct acgaggacga gcacatcctg gtgattgaca agcccgccgg cctggtggtc	360
catccggctg ccggccatca ggacggcacc ctgctgaatg ccttgctcta ccatgtcccg	420
gacatcgcca atgtgccgc cgccgggatc gtccaccgcc tggacaagga cacgaccggc	480
ctgatggtag tggccaagac gctggaggcc cacaccaagc tgggtggcgca actgcaggca	540
cggtcgggtca gccgcatcta cgaggcgatc gtgatcggcg tgatcacctc cggcggcacc	600
atcgatgcgc cgatcggacg gcatggcgtg cagcggcaga agatggcggg ggtcgacgcc	660
ggcaaggtgg cggtcagcca ttaccgcgtg ctggaacgct tccgtgcgca caccataacc	720
cgggtcaagc tggagaccgg gcgtacccac cagatccgcg tgcacatgag ccatattggc	780
tatcccctgg tcggcgatcc ggtctacggt gggcgcttca ggattccccc ggtggccagc	840
cagaccctgg tccagactct tcgcgaattc ccccggcagg cgctgcacgc gcgcttcctc	900
gaactggatc acccgccac cggcgtgcgc atgaagtggg aatcgccgct gccggaagaa	960
tctctctggc tgctcagcct gttgcgccag gatcgcgagg cgcttcgtcgg ttga	1014

<210> 315  
 <211> 337  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 315  
Pro Gln Arg Val Ala Asp Ser Lys Ser Arg Ala Glu His Arg Leu Leu  
1 5 10 15  
Leu Met Ser Asp Met Ile Gln Arg Ala Glu Val Pro Phe Glu Leu  
20 25 30  
Gly Gly Gln Arg Leu Asp Gln Ile Ala Ala Gln Leu Phe Pro Glu His  
35 40 45  
Ser Arg Ser Arg Leu Ala Gly Trp Ile Lys Asp Gly Arg Leu Thr Val  
50 55 60  
Asp Gly Ala Val Leu Arg Pro Arg Asp Ile Val His Ser Gly Ala Gln  
65 70 75 80  
Leu Val Leu Glu Ala Glu Gln Glu Ala Gln Gly Glu Trp Leu Ala Gln  
85 90 95  
Asp Ile Glu Leu Glu Ile Val Tyr Glu Asp Glu His Ile Leu Val Ile  
100 105 110  
Asp Lys Pro Ala Gly Leu Val Val His Pro Ala Ala Gly His Gln Asp  
115 120 125  
Gly Thr Leu Leu Asn Ala Leu Leu Tyr His Val Pro Asp Ile Ala Asn  
130 135 140  
Val Pro Arg Ala Gly Ile Val His Arg Leu Asp Lys Asp Thr Thr Gly  
145 150 155 160  
Leu Met Val Val Ala Lys Thr Leu Glu Ala His Thr Lys Leu Val Ala  
165 170 175  
Gln Leu Gln Ala Arg Ser Val Ser Arg Ile Tyr Glu Ala Ile Val Ile  
180 185 190  
Gly Val Ile Thr Ser Gly Gly Thr Ile Asp Ala Pro Ile Gly Arg His  
195 200 205  
Gly Val Gln Arg Gln Lys Met Ala Val Val Asp Ala Gly Lys Val Ala  
210 215 220  
Val Ser His Tyr Arg Val Leu Glu Arg Phe Arg Ala His Thr His Thr  
225 230 235 240  
Arg Val Lys Leu Glu Thr Gly Arg Thr His Gln Ile Arg Val His Met  
245 250 255  
Ser His Ile Gly Tyr Pro Leu Val Gly Asp Pro Val Tyr Gly Gly Arg  
260 265 270  
Phe Arg Ile Pro Pro Val Ala Ser Gln Thr Leu Val Gln Thr Leu Arg  
275 280 285  
Glu Phe Pro Arg Gln Ala Leu His Ala Arg Phe Leu Glu Leu Asp His  
290 295 300  
Pro Ala Thr Gly Val Arg Met Lys Trp Glu Ser Pro Leu Pro Glu Glu  
305 310 315 320  
Phe Leu Trp Leu Leu Ser Leu Leu Arg Gln Asp Arg Glu Ala Phe Val  
325 330 335  
Gly

<210> 316  
<211> 378  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 316  
ccgaccgtgc ctgcagttgc gccaccagct tgggtgtgggc ctccagcgctc ttggccacta 60  
ccatcaggcc ggtcgtgtcc ttgtccaggc ggtggacgat cccggcgcg cgcacattgg 120  
cgatgtccgg gacatggtag agcaaggcat tcagcagggt gccgtcctga tggccggcag 180  
ccggatggac caccaggccg gcgggcttgt caatcaccag gatgtgctcg tcctcgtaga 240  
cgatttccag ctcgatgtcc tgtgcgagcc actgcacctg ggcttctcgc tcggcctcca 300  
ggaccagttg cgcgccgctg tggacgatgt cgcgcggg cagcacggcg ccgtcgacgg 360

tcaggcgacc gtccttga

378

<210> 317  
<211> 125  
<212> PRT  
<213> *Pseudomonas aeruginosa*

<400> 317  
Pro Thr Val Pro Ala Val Ala Pro Pro Ala Trp Cys Gly Pro Pro Ala  
1 5 10 15  
Ser Trp Pro Leu Pro Ser Gly Arg Ser Cys Pro Cys Pro Gly Gly Gly  
20 25 30  
Arg Ser Arg Arg Ala Ala His Trp Arg Cys Pro Gly His Gly Arg Ala  
35 40 45  
Arg His Ser Ala Gly Cys Arg Pro Asp Gly Arg Gln Pro Asp Gly Pro  
50 55 60  
Pro Gly Arg Arg Ala Cys Gln Ser Pro Gly Cys Ala Arg Pro Arg Arg  
65 70 75 80  
Arg Phe Pro Ala Arg Cys Pro Val Arg Ala Thr Arg Pro Gly Leu Pro  
85 90 95  
Ala Arg Pro Pro Gly Pro Val Ala Arg Arg Cys Gly Arg Cys Arg Ala  
100 105 110  
Gly Ala Ala Arg Arg Arg Arg Arg Ser Gly Asp Arg Pro  
115 120 125

<210> 318  
<211> 303  
<212> DNA  
<213> *Pseudomonas aeruginosa*

<400> 318  
gcacgtctc ctactcatgt ccgatatgat tcaacgcgcg gccgaggtgc cgttcgagct 60  
gggtggccag cgtctcgacc agatcgccgc ccagcttttt cccgaacact cccgctcccg 120  
tctggccggc tggatcaagg acggtcgcct gaccgtcgac ggcgccgtgc tgcgcccgcg 180  
cgacatcgtc cacagcggcg cgcaactggc cctggaggcc gagcaggaag cccagggcga 240  
gtggctcgca caggacatcg agctggaaat cgtctacgag gacgagcaca tcctggtgat 300  
tga 303

<210> 319  
<211> 100  
<212> PRT  
<213> *Pseudomonas aeruginosa*

<400> 319  
Ala Ser Ser Pro Thr His Val Arg Tyr Asp Ser Thr Arg Gly Arg Gly  
1 5 10 15  
Ala Val Arg Ala Gly Trp Pro Ala Ser Arg Pro Asp Arg Arg Pro Ala  
20 25 30  
Phe Ser Arg Thr Leu Pro Leu Pro Ser Gly Arg Leu Asp Gln Gly Arg  
35 40 45  
Ser Pro Asp Arg Arg Arg Arg Arg Ala Ala Pro Ala Arg His Arg Pro  
50 55 60  
Gln Arg Arg Ala Thr Gly Pro Gly Gly Arg Ala Gly Ser Pro Gly Arg  
65 70 75 80  
Val Ala Arg Thr Gly His Arg Ala Gly Asn Arg Leu Arg Gly Arg Ala  
85 90 95  
His Pro Gly Asp  
100

<210> 320  
 <211> 1590  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 320  
 tcttccagtt cgctggagat cagcaggacc agtaccaggc cgatggtcag gcggtacagg 60  
 tggtagacac ggaggatgag ttgcccctgc tcctcgtca gccgtagccg ttcagcgcg 120  
 acggtcgccc tggctcctggc gcagggtgag ctgggtgcaa taccagcggt gttcgtgggc 180  
 gagggcggtg gcctgcggca cgtggacgcc gcaatgggag cagcggacca tcggcgatgc 240  
 gctcggctcg tcctgcggac gttgctgctg gcgcggagtg ggacgggtaa agcgacgcca 300  
 gagccagaac gcgatggcga tcaggggcat ccagaacagg aggcggaaaa ggcccatggt 360  
 gatctcggag gctggagaaa gctgcagttt agccaagccg ccggctcgat cccagacggg 420  
 aaggtccagg ctgtgcggcg tttggcgctg ggagaggcat ggcggcgggc aaaaagaagg 480  
 gaggcctgag cctcccttcg gtgtttcgtg cgatcagtcg aagagaccga aggtcatgta 540  
 gctccaccag gagcgaccgg agtcctcgtc gtcacgctc tccggcttct cgtcgtcggc 600  
 gctgtgatcc tgggttttccg gcttcagttc ggcggggagc tcccgctcgg catcctcgta 660  
 ctgcttgatc acgtccttgg cggcctgggt ttccatgtgc ggcggcggct cgccgccttc 720  
 gatcaggccc aggggtggcct tggccagcca ggagcgggtg tcggcctcgc tttcgcgggc 780  
 gacgaactcg ccatccttga ggctggcggt atccggatag ttcagcttga gggtttccag 840  
 gctgggtgctg gccaggctgt cgagaccag gcgacggtag gcttcgacca tgatcgccag 900  
 gccatcgccg acggccgggg tttcctggaa gttctccacc acgtagcgac cgcggttggc 960  
 ggcggcgaca taggcctggc gcttcaggta gtagtggcgc acgtgcactt cgtaggccgc 1020  
 cagcagggtg cgcaggatca ccatgcgcgc cttggcgctc ggggcgtagc ggctgttggg 1080  
 gaagcggctg gtgagctggg cgaactcgtt gaaggagtcg cgggcggcgc ccgggtcgcg 1140  
 cttggtcatg tccagcggca ggaagcgcg cagcaggccg cggtcctggt cgaaggagga 1200  
 caggcctttg aggtagtagg cgtagtcgac gttggggtgc tgcgcatgca ggcgatgaa 1260  
 gcgttcggcg gcggcgcggg cggcttcggg ctccatgttc ttgtagtgg cgtagatcag 1320  
 ctcgagctgg gcctgctcgg cgtagcggcc gaagggatag cgcgattcga gggctttcag 1380  
 cttggtgacg gcgctgttgt agctcttgtt gttgaggtcg tcctgcgcct gctggtacag 1440  
 ctggctctcg ctcaggttct cgtcgacagt ctcctgttgc gaggagcagg ctgcggtgag 1500  
 ggcgaggatg gcgatcagca gcagggtgtt cacttgcatg gcggcttgcg tcctctggac 1560  
 ggtcggcttg gcctcaaccg tctgttatga 1590

<210> 321  
 <211> 529  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 321  
 Ser Ser Ser Ser Leu Glu Ile Ser Arg Thr Ser Thr Arg Pro Met Val  
 1 5 10 15  
 Arg Arg Tyr Arg Trp Tyr Arg Arg Arg Met Arg Cys Pro Cys Ser Ser  
 20 25 30  
 Leu Ser Arg Ser Arg Ser Ala Arg Thr Val Ala Leu Val Leu Ala Gln  
 35 40 45  
 Val Arg Leu Ala Ala Ile Pro Ala Leu Phe Val Gly Glu Gly Val Gly  
 50 55 60  
 Leu Arg His Val Asp Ala Ala Met Gly Ala Ala Asp His Arg Arg Cys  
 65 70 75 80  
 Ala Arg Leu Val Leu Arg Thr Leu Leu Leu Ala Arg Ser Gly Thr Gly  
 85 90 95  
 Lys Ala Thr Pro Glu Pro Glu Arg Asp Gly Asp Gln Gly Asp Pro Glu  
 100 105 110  
 Gln Glu Ala Glu Lys Ala His Gly Asp Leu Gly Gly Trp Arg Lys Leu  
 115 120 125  
 Gln Phe Ser Gln Ala Ala Gly Ser Ile Pro Asp Gly Lys Val Gln Ala  
 130 135 140

Val	Arg	Arg	Leu	Ala	Leu	Gly	Glu	Ala	Trp	Arg	Arg	Ala	Lys	Arg	Arg
145					150					155					160
Glu	Ala	Cys	Ala	Ser	Leu	Arg	Cys	Phe	Val	Arg	Ser	Val	Glu	Glu	Thr
				165					170						175
Glu	Gly	His	Val	Ala	Pro	Pro	Gly	Ala	Thr	Gly	Val	Leu	Val	Val	Ile
			180					185							190
Ala	Leu	Arg	Leu	Leu	Val	Val	Gly	Ala	Val	Ile	Leu	Val	Phe	Arg	Leu
			195				200					205			
Gln	Phe	Gly	Gly	Asp	Leu	Pro	Leu	Gly	Ile	Leu	Val	Leu	Leu	Asp	His
	210					215					220				
Val	Leu	Gly	Gly	Leu	Gly	Phe	His	Val	Arg	Arg	Arg	Leu	Ala	Ala	Phe
225					230					235					240
Asp	Gln	Ala	Gln	Gly	Gly	Leu	Gly	Gln	Pro	Gly	Ala	Gly	Val	Gly	Leu
				245					250					255	
Ala	Phe	Ala	Gly	Asp	Glu	Leu	Ala	Ile	Leu	Glu	Ala	Gly	Val	Ile	Arg
			260					265					270		
Ile	Val	Gln	Leu	Glu	Gly	Phe	Gln	Ala	Gly	Ala	Gly	Gln	Val	Val	Glu
		275					280					285			
Thr	Gln	Ala	Thr	Val	Gly	Phe	Asp	His	Asp	Arg	Gln	Ala	Ile	Ala	Asp
	290					295					300				
Gly	Arg	Gly	Phe	Leu	Glu	Val	Leu	His	His	Val	Ala	Thr	Ala	Val	Gly
305					310					315					320
Gly	Gly	Asp	Ile	Gly	Leu	Ala	Leu	Gln	Val	Val	Val	Ala	Asp	Val	His
				325					330					335	
Phe	Val	Gly	Arg	Gln	Gln	Val	Ala	Gln	Val	His	His	Ala	Arg	Leu	Gly
			340					345					350		
Val	Arg	Gly	Val	Ala	Ala	Val	Gly	Glu	Ala	Ala	Gly	Glu	Leu	Gly	Glu
		355					360					365			
Leu	Val	Glu	Gly	Val	Ala	Gly	Gly	Ala	Arg	Val	Ala	Leu	Gly	His	Val
		370				375					380				
Gln	Arg	Gln	Glu	Ala	Arg	Gln	Gln	Ala	Ala	Val	Leu	Val	Glu	Gly	Gly
385					390					395					400
Gln	Ala	Phe	Glu	Val	Val	Gly	Val	Val	Asp	Val	Gly	Val	Leu	Arg	Met
				405					410					415	
Gln	Ala	Asp	Glu	Ala	Phe	Gly	Gly	Gly	Ala	Gly	Gly	Phe	Gly	Leu	His
			420					425					430		
Val	Leu	Val	Val	Gly	Val	Asp	Gln	Leu	Glu	Leu	Gly	Leu	Leu	Gly	Val
		435					440					445			
Ala	Ala	Glu	Gly	Ile	Ala	Arg	Phe	Glu	Gly	Phe	Gln	Leu	Gly	Asp	Gly
		450				455					460				
Ala	Val	Val	Ala	Leu	Val	Val	Glu	Val	Val	Leu	Arg	Leu	Leu	Val	Gln
465					470					475					480
Leu	Ala	Leu	Ala	Gln	Val	Leu	Val	Asp	Ser	Leu	Leu	Val	Arg	Gly	Ala
				485					490					495	
Gly	Cys	Gly	Glu	Gly	Glu	Asp	Gly	Asp	Gln	Gln	Gln	Val	Phe	His	Leu
			500					505					510		
His	Gly	Gly	Leu	Arg	Pro	Trp	Asp	Gly	Arg	Leu	Gly	Leu	Asn	Arg	Leu
		515					520					525			

Leu

<210> 322

<211> 1071

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 322

cagacggttg aggccaagcc gaccgtccca gggacgcaag ccgccatgca agtgaaacac

60

ctgctgctga	tcgccatcct	cgccctcacc	gcagcctgct	cctcgaacaa	ggagactgtc	120
gacgagaacc	tgagcgagag	ccagctgtac	cagcaggcgc	aggacgacct	caacaacaag	180
agctacaaca	gcgccgtcac	caagctgaaa	gccctcgaat	cgcgctatcc	cttcggccgc	240
tacgccgagc	aggcccagct	cgagctgac	tacgccaaact	acaagaacat	ggagcccga	300
gccgcccgcg	ccgcccgcga	acgcttcac	cgcttgcac	cgcagcacc	caacgtcgac	360
tacgcctact	acctcaaagg	cctgtcctcc	ttcgaccagg	accgcggcct	gctggcgcg	420
ttcctgccgc	tggacatgac	caagcgcgac	ccggggcgccg	cccgcgactc	cttcaacgag	480
ttcgcccagc	tcaccagccg	cttccccaac	agccgctacg	ccccggacgc	caaggcgcgc	540
atggtgtacc	tgcgcaacct	gctggcggcc	tacgaagtgc	acgtcggcca	ctactacctg	600
aagcgccagg	cctatgtcgc	cgccgccaac	cgcggtcgc	acgtggtgga	gaacttccag	660
gaaaccccgg	ccgtcggcga	tggcctggcg	atcatggctg	aagcctaccg	tcgcctgggt	720
ctcgacgacc	tggccagcac	cagcctggaa	accctcaagc	tgaactatcc	ggataacgcc	780
agcctcaagg	atggcgagtt	cgtcgccgc	gaaagcgagg	ccgacaccgc	ctcctggctg	840
gccaaggcca	ccctgggcct	gatcgaaggc	ggcgagccgc	cgccgcacat	ggaaacccag	900
gccgccaagg	acgtgatcaa	gcagtacgag	gatgccgagc	gggagatccc	cgccgaactg	960
aagccgga	accaggatca	cagcgccgac	gacgagaagc	cggagagcga	tgacgacgag	1020
gactccggtc	gctcctgggtg	gagctacatg	accttcggtc	tcttcgactg	a	1071

<210> 323

<211> 356

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 323

Gln	Thr	Val	Glu	Ala	Lys	Pro	Thr	Val	Pro	Gly	Thr	Gln	Ala	Ala	Met
1				5					10					15	
Gln	Val	Lys	His	Leu	Leu	Leu	Ile	Ala	Ile	Leu	Ala	Leu	Thr	Ala	Ala
			20					25					30		
Cys	Ser	Ser	Asn	Lys	Glu	Thr	Val	Asp	Glu	Asn	Leu	Ser	Glu	Ser	Gln
		35					40					45			
Leu	Tyr	Gln	Gln	Ala	Gln	Asp	Asp	Leu	Asn	Asn	Lys	Ser	Tyr	Asn	Ser
	50					55					60				
Ala	Val	Thr	Lys	Leu	Lys	Ala	Leu	Glu	Ser	Arg	Tyr	Pro	Phe	Gly	Arg
65					70					75					80
Tyr	Ala	Glu	Gln	Ala	Gln	Leu	Glu	Leu	Ile	Tyr	Ala	Asn	Tyr	Lys	Asn
			85					90						95	
Met	Glu	Pro	Glu	Ala	Ala	Arg	Ala	Ala	Ala	Glu	Arg	Phe	Ile	Arg	Leu
			100					105					110		
His	Pro	Gln	His	Pro	Asn	Val	Asp	Tyr	Ala	Tyr	Tyr	Leu	Lys	Gly	Leu
		115					120					125			
Ser	Ser	Phe	Asp	Gln	Asp	Arg	Gly	Leu	Leu	Ala	Arg	Phe	Leu	Pro	Leu
	130					135					140				
Asp	Met	Thr	Lys	Arg	Asp	Pro	Gly	Ala	Ala	Arg	Asp	Ser	Phe	Asn	Glu
145					150					155					160
Phe	Ala	Gln	Leu	Thr	Ser	Arg	Phe	Pro	Asn	Ser	Arg	Tyr	Ala	Pro	Asp
			165					170						175	
Ala	Lys	Ala	Arg	Met	Val	Tyr	Leu	Arg	Asn	Leu	Leu	Ala	Ala	Tyr	Glu
			180					185						190	
Val	His	Val	Gly	His	Tyr	Tyr	Leu	Lys	Arg	Gln	Ala	Tyr	Val	Ala	Ala
		195					200					205			
Ala	Asn	Arg	Gly	Arg	Tyr	Val	Val	Glu	Asn	Phe	Gln	Glu	Thr	Pro	Ala
	210					215					220				
Val	Gly	Asp	Gly	Leu	Ala	Ile	Met	Val	Glu	Ala	Tyr	Arg	Arg	Leu	Gly
225					230					235					240
Leu	Asp	Asp	Leu	Ala	Ser	Thr	Ser	Leu	Glu	Thr	Leu	Lys	Leu	Asn	Tyr
			245						250					255	
Pro	Asp	Asn	Ala	Ser	Leu	Lys	Asp	Gly	Glu	Phe	Val	Ala	Arg	Glu	Ser
		260						265					270		
Glu	Ala	Asp	Thr	Arg	Ser	Trp	Leu	Ala	Lys	Ala	Thr	Leu	Gly	Leu	Ile

	275					280					285								
Glu	Gly	Gly	Glu	Pro	Pro	Pro	His	Met	Glu	Thr	Gln	Ala	Ala	Lys	Asp				
	290					295					300								
Val	Ile	Lys	Gln	Tyr	Glu	Asp	Ala	Glu	Arg	Glu	Ile	Pro	Ala	Glu	Leu				
	305				310					315					320				
Lys	Pro	Glu	Asn	Gln	Asp	His	Ser	Ala	Asp	Asp	Glu	Lys	Pro	Glu	Ser				
			325						330					335					
Asp	Asp	Asp	Glu	Asp	Ser	Gly	Arg	Ser	Trp	Trp	Ser	Tyr	Met	Thr	Phe				
	340							345					350						
Gly	Leu	Phe	Asp																
	355																		

<210> 324  
 <211> 765  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 324																				
ggccaagccg	accgtcccag	ggacgcaagc	cgccatgcaa	gtgaaacacc	tgctgctgat															60
cgccatcctc	gccctcaccg	cagcctgctc	ctcgaacaag	gagactgtcg	acgagaacct															120
gagcgagagc	cagctgtacc	agcaggcgca	ggacgacctc	aacaacaaga	gctacaacag															180
cgccgtcacc	aagctgaaag	ccctcgaatc	gcgctatccc	ttcggccgct	acgccgagca															240
ggcccagctc	gagctgatct	acgccaacta	caagaacatg	gagcccgaag	ccgcccgcgc															300
cgccgcccga	cgcttcatcc	gcctgcatcc	gcagcaccac	aacgtcgact	acgcctacta															360
cctcaaaggc	ctgtcctcct	tcgaccagga	ccgcggcctg	ctggcgcgct	tcctgcccgt															420
ggacatgacc	aagcgcgacc	cgggcgcccgc	ccgcgactcc	ttcaacgagt	tcgcccagct															480
caccagccgc	ttcccccaaca	gccgctacgc	cccggacgcc	aaggcgcgca	tggtgtacct															540
gcgcaacctg	ctggcggcct	acgaagtgc	cgtcggccac	tactacctga	agcgccaggc															600
ctatgtcgcc	gccgccaacc	gcggtcgcta	cgtgggtggag	aacttccagg	aaaccccggc															660
cgtcggcgat	ggcctggcga	tcatggctcga	agcctaccgt	cgcttgggtc	tcgacgacct															720
ggccagcacc	agcctggaaa	ccctcaagct	gaactatccg	gataa																765

<210> 325  
 <211> 254  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 325																				
Gly	Gln	Ala	Asp	Arg	Pro	Arg	Asp	Ala	Ser	Arg	His	Ala	Ser	Glu	Thr					
1				5				10						15						
Pro	Ala	Ala	Asp	Arg	His	Pro	Arg	Pro	His	Arg	Ser	Leu	Leu	Leu	Glu					
			20					25						30						
Gln	Gly	Asp	Cys	Arg	Arg	Glu	Pro	Glu	Arg	Glu	Pro	Ala	Val	Pro	Ala					
		35				40						45								
Gly	Ala	Gly	Arg	Pro	Gln	Gln	Gln	Glu	Leu	Gln	Gln	Arg	Arg	His	Gln					
	50				55					60										
Ala	Glu	Ser	Pro	Arg	Ile	Ala	Leu	Ser	Leu	Arg	Pro	Leu	Arg	Arg	Ala					
	65				70					75					80					
Gly	Pro	Ala	Arg	Ala	Asp	Leu	Arg	Gln	Leu	Gln	Glu	His	Gly	Ala	Arg					
			85					90						95						
Ser	Arg	Pro	Arg	Arg	Arg	Thr	Leu	His	Pro	Pro	Ala	Ser	Ala	Ala						
		100					105						110							
Pro	Gln	Arg	Arg	Leu	Arg	Leu	Leu	Pro	Gln	Arg	Pro	Val	Leu	Leu	Arg					
		115					120						125							
Pro	Gly	Pro	Arg	Pro	Ala	Gly	Ala	Leu	Pro	Ala	Ala	Gly	His	Asp	Gln					
	130				135					140										
Ala	Arg	Pro	Gly	Arg	Arg	Pro	Arg	Leu	Leu	Gln	Arg	Val	Arg	Pro	Ala					
	145				150					155					160					



Lys Arg Pro Lys Val Met  
180

<210> 328  
<211> 402  
<212> DNA  
<213> Pseudomonas aeruginosa

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<400> 328
tcgcacgaaa caccgaaggg aggcgcaggc ctcccttctt tttgcccgcc gccatgcctc      60
tcccagcgcc aaacgccgca cagcctggac cttcccgtct gggatcgagc cggcggcttg      120
gctaaactgc agctttctcc agcctccgag atcaccatgg gccttttccg cctcctgttc      180
tggatcgccc tgatcgccat cgcgttctgg ctctggcgtc gctttaccgg tcccactccg      240
cgccagcagc aacgtccgca ggacgagccg agcgcacgcg cgatgggtccg ctgcgccccat      300
tgcggcgtcc acgtgccgca ggccaacgcc ctgcgccacg aacaacgctg gtattgcagc      360
caggcgcacc tgcgccagga ccaggggcgac cgtgcgcgct ga                          402
```

<210> 329  
<211> 133  
<212> PRT  
<213> Pseudomonas aeruginosa

```
<400> 329
Ser His Glu Thr Pro Lys Gly Gly Ala Gly Leu Pro Ser Phe Cys Pro
 1          5          10          15
Pro Pro Cys Leu Ser Gln Arg Gln Thr Pro His Ser Leu Asp Leu Pro
 20          25          30
Val Trp Asp Arg Ala Gly Gly Leu Ala Lys Leu Gln Leu Ser Pro Ala
 35          40          45
Ser Glu Ile Thr Met Gly Leu Phe Arg Leu Leu Phe Trp Ile Ala Leu
 50          55          60
Ile Ala Ile Ala Phe Trp Leu Trp Arg Arg Phe Thr Arg Pro Thr Pro
 65          70          75          80
Arg Gln Gln Gln Arg Pro Gln Asp Glu Pro Ser Ala Ser Pro Met Val
 85          90          95
Arg Cys Ala His Cys Gly Val His Val Pro Gln Ala Asn Ala Leu Ala
100          105          110
His Glu Gln Arg Trp Tyr Cys Ser Gln Ala His Leu Arg Gln Asp Gln
115          120          125
Gly Asp Arg Ala Arg
130
```

<210> 330  
<211> 1791  
<212> DNA  
<213> Pseudomonas aeruginosa

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<400> 330
tcgccatcgc gttctggctc tggcgtcgct ttaccctgcc cactccgcgc cagcagcaac      60
gtccgcagga cgagccgagc gcacgcgcca tggtcgcgtg cggccattgc ggcgtccacg      120
tgccgcaggc caacgccctc gccacgaac aacgctggta ttgcagccag gcgcacctgc      180
gccaggacca gggcgaccgt gcgcgctgaa cggctacggc tgagcgagga gcaggggcaa      240
cgcacacctc gtctgtacca cctgtaccgc ctgaccatcg gcctgggtact ggtcctgctg      300
atctccagcg aactggaaga tcaggtcctc aagctcgtcc accctgaact gttccatgtc      360
ggcagttggg gctacctggg cttcaacatc ctggtcgcgc tgttcctgcc gccgtcgcgg      420
caattgctgc cgatcttcat cctcgcgctc accgacgtgc tgatgctttg cggcctgttc      480
tacgcaggtg gcggcgtacc cagcggcatc ggcagcctgc tggtggtggc ggtggccatt      540
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gccaacatcc	tgctgcgcgg	gcgcatcggc	ctgggtcatcg	cggcgggcggc	cagcctcggc	600
ctgctctacc	tgaccttctt	cctcagcctg	agcagtcgcg	acgccacca	ccactacgtc	660
cagggcggcg	gcctcggcac	cctgtgtctc	gccgccgcgc	tggtgatcca	ggctctgggtg	720
cggcgccagg	agcagaccga	aacgctggcc	gaagaacgcg	ccgagacggt	cgccaacctg	780
gaggaactca	acgcattgat	cctgcagcgc	atgcgcaccg	gcatectcgt	ggtcgatagc	840
cgtcaggcca	tcctcctcgc	caaccaggcc	gccctcggcc	tgctcaggca	ggacgacgtg	900
cagggcgcca	gcctcggccg	ccacagcccg	atgctgatgc	actgcatgaa	gcaatggcgc	960
ctgaatccca	gcctccgtcc	gccgacgctc	aaggtgggtgc	cggatggccc	gacggtgcaa	1020
cccagcttta	tcagcctcaa	ccgcgaagac	gaccagcacg	tgctgatctt	cctcgaagac	1080
atttcgcaga	tcgcccagca	ggcgagcag	atgaagctgg	ccggtcttgg	ccgcctgacc	1140
gccggcatcg	cccattgagat	ccgcaaccgc	ctggggcgca	tcagccacgc	cgcccaactg	1200
ctgcaggagt	cagaggaact	ggatgccccg	gaccgacgcc	tgacgcagat	catccaggac	1260
cagtcgaagc	ggatgaacct	ggtcacgcag	aacgtctcgc	agctctcccg	tcgccgccag	1320
gccgaaccgc	agcagctcga	cctgaaggag	tggcttcagc	ggttcgtcga	cgaatacccc	1380
ggcaggctgc	gcaacgacag	ccaactgcac	ctgcagctcg	gtgccggcga	catccagacc	1440
cgcattggacc	cacaccagtt	gaaccagggtg	ctgagcaacc	tggtgcagaa	cggctcttcgc	1500
tacagcgccc	aggcgacagc	gcgcggccag	gtctgggtga	gcctcgcgcg	cgacccggag	1560
agcgacctgc	cgggtgctgga	agtcacgcac	gacgggtccc	gcgtaccggc	ggacaaactg	1620
aacaacctgt	tcgaaccctt	ctttactaca	gaaagcaaag	gcaccggcct	gggcctctat	1680
ctctcccgcg	aactctgcga	gagcaaccag	gcacggatcg	actaccgcaa	tcgcgaggaa	1740
ggcggcggtc	gcttccgcat	caccttcgcc	caccgcgcga	aactcagctg	a	1791

<210> 331

<211> 596

<212> PRT

<213> Pseudomonas aeruginosa

<400> 331

Ser	Pro	Ser	Arg	Ser	Gly	Ser	Gly	Val	Ala	Leu	Pro	Val	Pro	Leu	Arg
1				5				10						15	
Ala	Ser	Ser	Asn	Val	Arg	Arg	Thr	Ser	Arg	Ala	His	Arg	Arg	Trp	Ser
			20					25					30		
Ala	Ala	Pro	Ile	Ala	Ala	Ser	Thr	Cys	Arg	Arg	Pro	Thr	Pro	Ser	Pro
		35					40					45			
Thr	Asn	Asn	Ala	Gly	Ile	Ala	Ala	Arg	Arg	Thr	Cys	Ala	Arg	Thr	Arg
	50					55					60				
Ala	Thr	Val	Arg	Ala	Glu	Arg	Leu	Arg	Leu	Ser	Glu	Glu	Gln	Gly	Gln
65					70				75					80	
Arg	Ile	Leu	Arg	Leu	Tyr	His	Leu	Tyr	Arg	Leu	Thr	Ile	Gly	Leu	Val
			85					90					95		
Leu	Val	Leu	Leu	Ile	Ser	Ser	Glu	Leu	Glu	Asp	Gln	Val	Leu	Lys	Leu
			100					105					110		
Val	His	Pro	Glu	Leu	Phe	His	Val	Gly	Ser	Trp	Cys	Tyr	Leu	Val	Phe
		115					120					125			
Asn	Ile	Leu	Val	Ala	Leu	Phe	Leu	Pro	Pro	Ser	Arg	Gln	Leu	Leu	Pro
		130				135					140				
Ile	Phe	Ile	Leu	Ala	Leu	Thr	Asp	Val	Leu	Met	Leu	Cys	Gly	Leu	Phe
145					150				155					160	
Tyr	Ala	Gly	Gly	Gly	Val	Pro	Ser	Gly	Ile	Gly	Ser	Leu	Leu	Val	Val
			165						170					175	
Ala	Val	Ala	Ile	Ala	Asn	Ile	Leu	Leu	Arg	Gly	Arg	Ile	Gly	Leu	Val
			180				185						190		
Ile	Ala	Ala	Ala	Ala	Ser	Leu	Gly	Leu	Leu	Tyr	Leu	Thr	Phe	Phe	Leu
		195					200					205			
Ser	Leu	Ser	Ser	Pro	Asp	Ala	Thr	Asn	His	Tyr	Val	Gln	Ala	Gly	Gly
	210					215					220				
Leu	Gly	Thr	Leu	Cys	Phe	Ala	Ala	Ala	Leu	Val	Ile	Gln	Ala	Leu	Val
225					230					235				240	
Arg	Arg	Gln	Glu	Gln	Thr	Glu	Thr	Leu	Ala	Glu	Glu	Arg	Ala	Glu	Thr

Val	Ala	Asn	245	Leu	Glu	Glu	Leu	Asn	250	Ala	Leu	Ile	Leu	Gln	Arg	255	Met	Arg
Thr	Gly	Ile	260	Leu	Val	Val	Asp	Ser	265	Arg	Gln	Ala	Ile	Leu	Leu	Ala	Asn	
Gln	Ala	Ala	275	Leu	Gly	Leu	Leu	Arg	280	Gln	Asp	Asp	Val	Gln	Gly	Ala	Ser	
Leu	Gly	Arg	290	His	Ser	Pro	Met	Leu	295	Met	His	Cys	Met	Lys	Gln	Trp	Arg	
Leu	Asn	Pro	305	Ser	Leu	Arg	Pro	Pro	310	Thr	Leu	Lys	Val	Val	Pro	Asp	Gly	
Pro	Thr	Val	325	Gln	Pro	Ser	Phe	Ile	330	Ser	Leu	Asn	Arg	Glu	Asp	Asp	Gln	
His	Val	Leu	340	Ile	Phe	Leu	Glu	Asp	345	Ile	Ser	Gln	Ile	Ala	Gln	Gln	Ala	
Gln	Gln	Met	355	Lys	Leu	Ala	Gly	Leu	360	Gly	Arg	Leu	Thr	Ala	Gly	Ile	Ala	
His	Glu	Ile	370	Arg	Asn	Pro	Leu	Gly	375	Ala	Ile	Ser	His	Ala	Ala	Gln	Leu	
Leu	Gln	Glu	385	Ser	Glu	Glu	Leu	Asp	390	Ala	Pro	Asp	Arg	Arg	Leu	Thr	Gln	
Ile	Ile	Gln	405	Asp	Gln	Ser	Lys	Arg	410	Met	Asn	Leu	Val	Ile	Glu	Asn	Val	
Leu	Gln	Leu	420	Ser	Arg	Arg	Arg	Gln	425	Ala	Glu	Pro	Gln	Gln	Leu	Asp	Leu	
Lys	Glu	Trp	435	Leu	Gln	Arg	Phe	Val	440	Asp	Glu	Tyr	Pro	Gly	Arg	Leu	Arg	
Asn	Asp	Ser	450	Gln	Leu	His	Leu	Gln	455	Leu	Gly	Ala	Gly	Asp	Ile	Gln	Thr	
Arg	Met	Asp	465	Pro	His	Gln	Leu	Asn	470	Gln	Val	Leu	Ser	Asn	Leu	Val	Gln	
Asn	Gly	Leu	485	Arg	Tyr	Ser	Ala	Gln	490	Ala	His	Gly	Arg	Gly	Gln	Val	Trp	
Leu	Ser	Leu	500	Ala	Arg	Asp	Pro	Glu	505	Ser	Asp	Leu	Pro	Val	Leu	Glu	Val	
Ile	Asp	Asp	515	Gly	Pro	Gly	Val	Pro	520	Ala	Asp	Lys	Leu	Asn	Asn	Leu	Phe	
Glu	Pro	Phe	530	Phe	Thr	Thr	Glu	Ser	535	Lys	Gly	Thr	Gly	Leu	Gly	Leu	Tyr	
Leu	Ser	Arg	545	Glu	Leu	Cys	Glu	Ser	550	Asn	Gln	Ala	Arg	Ile	Asp	Tyr	Arg	
Asn	Arg	Glu	565	Glu	Gly	Gly	Gly	Cys	570	Phe	Arg	Ile	Thr	Phe	Ala	His	Pro	
Arg	Lys	Leu	580	Ser					585									
			595															

<210> 332  
 <211> 996  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 332																		
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gatgccggcg	gtcaggcggc	caagaccggc	cagcttcac	tgctgcgcct	gctgggcgat													120
ctgcgaaatg	tcttcgagga	agatcagcac	gtgctggctg	tcttcgcggt	tgaggctgat													180
aaagctgggt	tgaccgctcg	ggccatccgg	caccaccttg	agcgctcggcg	gacggaggct													240
gggattcagg	cgccattgct	tcatgcagtg	catcagcatc	gggctgtggc	ggccgaggct													300
ggcgccctgc	acgtcgtcct	gcctgagcag	gccgagggcg	gcctggttgg	cgaggaggat													360

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ggcctgacgg ctatcgacca cgaggatgcc ggtgcgcatg cgctgcagga tcaatgcggt 420
gagttcctcc aggttggcga ccgtctcggc gcgttcttcg gccagcggtt cggctctgctc 480
ctggcgccgc accagagcct ggatcaccag cgcggcggcg aagcacaggg tgccgaggcc 540
gccggcctgg acgtagtggg ttggtggcgtc cggactgctc aggtctgagga agaaggctcag 600
gtagagcagg ccgaggctgg ccgccgccgc gatgaccagg ccgatgcgcc cgcgcgagcag 660
gatgttggca atggccaccg ccaccaccag caggctgccg atgccgctgg gtacgccgcc 720
acctgcgtag aacaggccgc aaagcatcag cacgtcggtg agcgcgagga tgaagatcgg 780
cagcaattgc cgcgacggcg gcaggaacag cgcgaccagg atgttgaaga ccaggtagca 840
ccaactgccg acatggaaca gttcagggtg gacgagcttg aggacctgat cttccagttc 900
gctggagatc agcaggacca gtaccaggcc gatggtcagg cggtacaggt ggtacagacg 960
gaggatgcgt tgccccgtct cctcgctcag ccgtag 996

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<210> 333  
 <211> 331  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

```

<400> 333
Leu Leu Gln Gln Leu Gly Gly Val Ala Asp Arg Ala Gln Arg Val Ala
1      5      10      15
Asp Leu Met Gly Asp Ala Gly Gly Gln Ala Ala Lys Thr Gly Gln Leu
20     25     30
His Leu Leu Arg Leu Leu Gly Asp Leu Arg Asn Val Phe Glu Glu Asp
35     40     45
Gln His Val Leu Val Val Phe Ala Val Glu Ala Asp Lys Ala Gly Leu
50     55     60
His Arg Arg Ala Ile Arg His His Leu Glu Arg Arg Arg Thr Glu Ala
65     70     75     80
Gly Ile Gln Ala Pro Leu Leu His Ala Val His Gln His Arg Ala Val
85     90     95
Ala Ala Glu Ala Gly Ala Leu His Val Val Leu Pro Glu Gln Ala Glu
100    105    110
Gly Gly Leu Val Gly Glu Glu Asp Gly Leu Thr Ala Ile Asp His Glu
115    120    125
Asp Ala Gly Ala His Ala Leu Gln Asp Gln Cys Val Glu Phe Leu Gln
130    135    140
Val Gly Asp Arg Leu Gly Ala Phe Phe Gly Gln Arg Phe Gly Leu Leu
145    150    155    160
Leu Ala Pro His Gln Ser Leu Asp His Gln Arg Gly Gly Glu Ala Gln
165    170    175
Gly Ala Glu Ala Ala Gly Leu Asp Val Val Val Gly Gly Val Arg Thr
180    185    190
Ala Gln Ala Glu Glu Glu Gly Gln Val Glu Gln Ala Glu Ala Gly Arg
195    200    205
Arg Arg Asp Asp Gln Ala Asp Ala Pro Ala Gln Gln Asp Val Gly Asn
210    215    220
Gly His Arg His His Gln Gln Ala Ala Asp Ala Ala Gly Tyr Ala Ala
225    230    235    240
Thr Cys Val Glu Gln Ala Ala Lys His Gln His Val Gly Glu Arg Glu
245    250    255
Asp Glu Asp Arg Gln Gln Leu Pro Arg Arg Arg Gln Glu Gln Arg Asp
260    265    270
Gln Asp Val Glu Asp Gln Val Ala Pro Thr Ala Asp Met Glu Gln Phe
275    280    285
Arg Val Asp Glu Leu Glu Asp Leu Ile Phe Gln Phe Ala Gly Asp Gln
290    295    300
Gln Asp Gln Tyr Gln Ala Asp Gly Gln Ala Val Gln Val Val Gln Thr
305    310    315    320
Glu Asp Ala Leu Pro Leu Leu Leu Ala Gln Pro

```

<210> 334  
 <211> 492  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 334  
 actgttccat gtcggcagtt ggtgctacct ggtcttcaac atcctggtcg cgctgttcct 60  
 gccgccgtcg cggcaattgc tgccgatctt catcctcgcg ctcaccgacg tgctgatgct 120  
 ttgcggcctg ttctacgcag gtggcggcgt acccagcggc atcggcagcc tgctggtggt 180  
 ggcgggtggc attgccaaca tcctgctgcy cgggcgcacg ggcctgggtca tcgcggcgcc 240  
 ggccagcctc ggctgctctt acctgacctt cttcctcagc ctgagcagtc cggacgccac 300  
 caaccactac gtccaggccg gcggcctcgg caccctgtgc ttcgccgccg cgctggtgat 360  
 ccaggctctg gtgcggcgcc aggagcagac cgaaacgctg gccgaagaac gcgccgagac 420  
 ggtcgccaac ctggaggaac tcaacgcatt gatcctgcag cgcacgcgca ccggcatcct 480  
 cgtggtcgat ag 492

<210> 335  
 <211> 163  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 335  
 Thr Val Pro Cys Arg Gln Leu Val Leu Pro Gly Leu Gln His Pro Gly  
 1 5 10 15  
 Arg Ala Val Pro Ala Ala Val Ala Ala Ile Ala Ala Asp Leu His Pro  
 20 25 30  
 Arg Ala His Arg Arg Ala Asp Ala Leu Arg Pro Val Leu Arg Arg Trp  
 35 40 45  
 Arg Arg Thr Gln Arg His Arg Gln Pro Ala Gly Gly Gly Gly Gly His  
 50 55 60  
 Cys Gln His Pro Ala Ala Arg Ala His Arg Pro Gly His Arg Gly Gly  
 65 70 75 80  
 Gly Gln Pro Arg Pro Ala Leu Pro Asp Leu Leu Pro Gln Pro Glu Gln  
 85 90 95  
 Ser Gly Arg His Gln Pro Leu Arg Pro Gly Arg Arg Pro Arg His Pro  
 100 105 110  
 Val Leu Arg Arg Arg Ala Gly Asp Pro Gly Ser Gly Ala Ala Pro Gly  
 115 120 125  
 Ala Asp Arg Asn Ala Gly Arg Arg Thr Arg Arg Asp Gly Arg Gln Pro  
 130 135 140  
 Gly Gly Thr Gln Arg Ile Asp Pro Ala Ala His Ala His Arg His Pro  
 145 150 155 160  
 Arg Gly Arg

<210> 336  
 <211> 318  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 336  
 ccgtcaggcc atcctcctcg ccaaccaggc cgccctcggc ctgctcaggc aggacgacgt 60  
 gcagggcgcc agcctcggcc gccacagccc gatgctgatg cactgcatga agcaatggcg 120  
 cctgaatccc agcctccgct cgccgacgct caaggtggtg ccgcatggcc cgacggtgca 180  
 acccagcttt atcagcctca accgcgaaga cgaccagcac gtgctgatct tcctcgaaga 240

catttcgcag atcgcccagc aggcgcagca gatgaagctg gccggtcttg gccgcctgac 300  
cgccggcatc gcccata 318

<210> 337  
<211> 105  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 337  
Pro Ser Gly His Pro Pro Arg Gln Pro Gly Arg Pro Arg Pro Ala Gln  
1 5 10 15  
Ala Gly Arg Arg Ala Gly Arg Gln Pro Arg Pro Pro Gln Pro Asp Ala  
20 25 30  
Asp Ala Leu His Glu Ala Met Ala Pro Glu Ser Gln Pro Pro Ser Ala  
35 40 45  
Asp Ala Gln Gly Gly Ala Gly Trp Pro Asp Gly Ala Thr Gln Leu Tyr  
50 55 60  
Gln Pro Gln Pro Arg Arg Arg Pro Ala Arg Ala Asp Leu Pro Arg Arg  
65 70 75 80  
His Phe Ala Asp Arg Pro Ala Gly Ala Ala Asp Glu Ala Gly Arg Ser  
85 90 95  
Trp Pro Pro Asp Arg Arg His Arg Pro  
100 105

<210> 338  
<211> 513  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 338  
agccactcct tcaggtcgag ctgctgcggt tcggcctggc gccgacggga gagctgcagg 60  
acgtttctcga tgaccagggt catccgcttc gactggctct ggatgatctg cgtcaggcgt 120  
cggtccgggg catccagttc ctctgactcc tgcagcagtt gggcggcgtg gctgatcgcg 180  
cccagcgggt tgcggatctc atgggcgatg ccggcgggtca gccggccaag accggccagc 240  
ttcatctgct gcgcctgctg ggcatctgc gaaatgtctt cgaggaagat cagcacgtgc 300  
tggtcgtctt cgcggttgag gctgataaag ctgggttgca ccgtcgggcc atccggcacc 360  
accttgagcg tcggcggacg gaggtgggga ttcaggcgcc attgcttcat gcagtgcac 420  
agcatcgggc tgtggcggcc gaggtggcg ccctgcacgt cgtcctgcct gagcaggccg 480  
agggcggcct ggttggcgag gaggatggcc tga 513

<210> 339  
<211> 170  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 339  
Ser His Ser Phe Arg Ser Ser Cys Cys Gly Ser Ala Trp Arg Arg Arg  
1 5 10 15  
Glu Ser Cys Arg Thr Phe Ser Met Thr Arg Phe Ile Arg Phe Asp Trp  
20 25 30  
Ser Trp Met Ile Cys Val Arg Arg Arg Ser Gly Ala Ser Ser Ser Ser  
35 40 45  
Asp Ser Cys Ser Ser Trp Ala Ala Trp Leu Ile Ala Pro Ser Gly Leu  
50 55 60  
Arg Ile Ser Trp Ala Met Pro Ala Val Arg Arg Pro Arg Pro Ala Ser  
65 70 75 80  
Phe Ile Cys Cys Ala Cys Trp Ala Ile Cys Glu Met Ser Ser Arg Lys  
85 90 95

Ile	Ser	Thr	Cys	Trp	Ser	Ser	Ser	Arg	Leu	Arg	Leu	Ile	Lys	Leu	Gly
			100					105					110		
Cys	Thr	Val	Gly	Pro	Ser	Gly	Thr	Thr	Leu	Ser	Val	Gly	Gly	Arg	Arg
		115					120					125			
Leu	Gly	Phe	Arg	Arg	His	Cys	Phe	Met	Gln	Cys	Ile	Ser	Ile	Gly	Leu
	130					135					140				
Trp	Arg	Pro	Arg	Leu	Ala	Pro	Cys	Thr	Ser	Ser	Cys	Leu	Ser	Arg	Pro
145					150					155					160
Arg	Ala	Ala	Trp	Leu	Ala	Arg	Arg	Met	Ala						
				165					170						

<210> 340  
 <211> 888  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 340															
gatccgcaac	ccgctggg	cgc	cgatcagcca	cgccgccc	ctgctgcagg	agtcagagga									60
actggatgcc	ccggaccgac	gcctgacgca	gatcatccag	gaccagtcga	agcggatgaa										120
cctgggtcatc	gagaacgtcc	tcgagctctc	ccgtcgccgc	caggccgaac	cgcagcagct										180
cgacctgaag	gagtggcttc	agcggttcgt	cgacgaatac	cccggcaggc	tgcgcaacga										240
cagccaactg	cacctgcagc	tcggtgccgg	cgacatccag	acccgcatgg	accacacca										300
gttgaaccag	gtgctgagca	acctgggtgca	gaacggtctt	cgctacagcg	cccaggcgca										360
cgggcgcggc	caggtctggc	tgagcctcgc	gcgcgacccg	gagagcgacc	tgccggtgct										420
ggaagtcatc	gacgacggtc	ccggcggtacc	ggcggaacaaa	ctgaacaacc	tgttcgaacc										480
cttctttact	acagaaagca	aaggcaccgg	cctgggcctc	tatctctccc	gcgaactctg										540
cgagagcaac	caggcacgga	tcgactaccg	caatcgcgag	gaaggcggcg	gctgcttccg										600
catcaccttc	gcccacccgc	gcaaactcag	ctgacggaag	ccgcacgcat	gagccgacaa										660
aaagccctga	tcgtcgacga	tgaaccggat	atccgcgaac	tgctggaaat	cactctcggc										720
cgcatagaagc	tggacacccg	cagcgcccgc	aacgtcaagg	aagccgcgag	ttgctggccc										780
gcgagccggtt	cgacctgtgc	ctcaccgaca	tgcgctgcc	ggacggcagc	ggcctcgatc										840
tggtccagta	catccagcag	cgccatccac	agaccccggg	ggccatga											888

<210> 341  
 <211> 295  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 341															
Asp	Pro	Gln	Pro	Ala	Gly	Arg	Asp	Gln	Pro	Arg	Arg	Pro	Thr	Ala	Ala
1			5					10						15	
Gly	Val	Arg	Gly	Thr	Gly	Cys	Pro	Gly	Pro	Thr	Pro	Asp	Ala	Asp	His
		20						25				30			
Pro	Gly	Pro	Val	Glu	Ala	Asp	Glu	Pro	Gly	His	Arg	Glu	Arg	Pro	Ala
		35				40					45				
Ala	Leu	Pro	Ser	Pro	Pro	Gly	Arg	Thr	Ala	Ala	Ala	Arg	Pro	Glu	Gly
	50					55					60				
Val	Ala	Ser	Ala	Val	Arg	Arg	Arg	Ile	Pro	Arg	Gln	Ala	Ala	Gln	Arg
65				70					75					80	
Gln	Pro	Thr	Ala	Pro	Ala	Ala	Arg	Cys	Arg	Arg	His	Pro	Asp	Pro	His
			85					90					95		
Gly	Pro	Thr	Pro	Val	Glu	Pro	Gly	Ala	Glu	Gln	Pro	Gly	Ala	Glu	Arg
		100					105					110			
Ser	Ser	Leu	Gln	Arg	Pro	Gly	Ala	Arg	Ala	Arg	Pro	Gly	Leu	Ala	Glu
	115					120						125			
Pro	Arg	Ala	Arg	Pro	Gly	Glu	Arg	Pro	Ala	Gly	Ala	Gly	Ser	His	Arg
	130					135					140				
Arg	Arg	Ser	Arg	Arg	Thr	Gly	Gly	Gln	Thr	Glu	Gln	Pro	Val	Arg	Thr

145		150		155		160									
Leu	Leu	Tyr	Tyr	Arg	Lys	Gln	Arg	His	Arg	Pro	Gly	Pro	Leu	Ser	Leu
				165					170					175	
Pro	Arg	Thr	Leu	Arg	Glu	Gln	Pro	Gly	Thr	Asp	Arg	Leu	Pro	Gln	Ser
			180					185					190		
Arg	Gly	Arg	Arg	Arg	Leu	Leu	Pro	His	His	Leu	Arg	Pro	Pro	Ala	Gln
		195					200					205			
Thr	Gln	Leu	Thr	Glu	Ala	Ala	Arg	Met	Ser	Arg	Gln	Lys	Ala	Leu	Ile
	210				215						220				
Val	Asp	Asp	Glu	Pro	Asp	Ile	Arg	Glu	Leu	Leu	Glu	Ile	Thr	Leu	Gly
225					230					235					240
Arg	Met	Lys	Leu	Asp	Thr	Arg	Ser	Ala	Arg	Asn	Val	Lys	Glu	Ala	Ala
			245					250					255		
Ser	Cys	Trp	Pro	Ala	Ser	Arg	Ser	Thr	Cys	Ala	Ser	Pro	Thr	Cys	Ala
		260					265					270			
Cys	Arg	Thr	Ala	Ala	Ala	Ser	Ile	Trp	Ser	Ser	Thr	Ser	Ser	Ser	Ala
	275					280					285				
Ile	His	Arg	Pro	Arg	Trp	Pro									
	290					295									

<210> 342  
 <211> 657  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 342																	
tttcagcag	ttcgcggata	tccggttcat	cgtcgacgat	cagggctttt	tgtcggctca												60
tgcgtgcggc	ttccgtcagc	tgagtttgcg	cgggtgggcg	aaggtgatgc	ggaagcagcc												120
gccgccttcc	tcgcgattgc	ggtagtcgat	ccgtgcctgg	ttgctctcgc	agagttcgcg												180
ggagagatag	aggcccaggc	cggtgccctt	gctttctgta	gtaaagaagg	gttcgaacag												240
gttggttcagt	ttgtccgccc	gtacgccggg	accgtcgtcg	atgacttcca	gcaccggcag												300
gtcgctctcc	gggtcgcgcg	cgaggctcag	ccagacctgg	ccgcgcccgt	gcgcctgggc												360
gctgtagcga	agaccgttct	gcaccagggt	gctcagcacc	tggttcaact	ggtgtgggtc												420
catgcgggtc	tggatgtcgc	cggcaccgag	ctgcagggtc	agttggctgt	cgttgcgcag												480
cctgccgggg	tattcgtcga	cgaaccgctg	aagccactcc	ttcaggtcga	gctgctgcgg												540
ttcggcctgg	cggcgacggg	agagctgcag	gacgttctcg	atgaccagg	tcattccgctt												600
cgactgggtc	tggatgatct	gcgtcaggcg	tcggtccggg	gcattccagtt	cctctga												657

<210> 343  
 <211> 218  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 343																	
Phe	Pro	Ala	Val	Arg	Gly	Tyr	Pro	Val	His	Arg	Arg	Arg	Ser	Gly	Leu		
1				5					10					15			
Phe	Val	Gly	Ser	Cys	Val	Arg	Leu	Pro	Ser	Ala	Glu	Phe	Ala	Arg	Val		
			20					25					30				
Gly	Glu	Gly	Asp	Ala	Glu	Ala	Ala	Ala	Phe	Leu	Ala	Ile	Ala	Val			
	35					40				45							
Val	Asp	Pro	Cys	Leu	Val	Ala	Leu	Ala	Glu	Phe	Ala	Gly	Glu	Ile	Glu		
	50				55				60								
Ala	Gln	Ala	Gly	Ala	Phe	Ala	Phe	Cys	Ser	Lys	Glu	Gly	Phe	Glu	Gln		
65				70				75						80			
Val	Val	Gln	Phe	Val	Arg	Arg	Tyr	Ala	Gly	Thr	Val	Val	Asp	Asp	Phe		
			85					90					95				
Gln	His	Arg	Gln	Val	Ala	Leu	Arg	Val	Ala	Arg	Glu	Ala	Gln	Pro	Asp		
			100				105						110				

Leu Ala Ala Pro Val Arg Leu Gly Ala Val Ala Lys Thr Val Leu His  
           115                  120                  125  
 Gln Val Ala Gln His Leu Val Gln Leu Val Trp Val His Ala Gly Leu  
           130                  135                  140  
 Asp Val Ala Gly Thr Glu Leu Gln Val Gln Leu Ala Val Val Ala Gln  
 145                  150                  155                  160  
 Pro Ala Gly Val Phe Val Asp Glu Pro Leu Lys Pro Leu Leu Gln Val  
                   165                  170                  175  
 Glu Leu Leu Arg Phe Gly Leu Ala Ala Thr Gly Glu Leu Gln Asp Val  
                   180                  185                  190  
 Leu Asp Asp Gln Val His Pro Leu Arg Leu Val Leu Asp Asp Leu Arg  
           195                  200                  205  
 Gln Ala Ser Val Arg Gly Ile Gln Phe Leu  
       210                  215

<210> 344  
 <211> 300  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 344  
 cttccagcac cggcaggtcg ctctccgggt cgcgcgcgag gctcagccag acctggccgc 60  
 gcccggtgcg ctgggcgctg tagcgaagac cgttctgcac cagggttgctc agcacctggt 120  
 tcaactggtg tgggtccatg cgggtctgga tgtcgccggc accgagctgc aggtgcagtt 180  
 ggctgtcggt gcgcagcctg ccgggggtatt cgtcgacgaa ccgctgaagc cactccttca 240  
 ggtcgagctg ctgcggttcg gcctggcggc gacgggagag ctgcaggacg ttctcgatga 300

<210> 345  
 <211> 99  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 345  
 Leu Pro Ala Pro Ala Gly Arg Ser Pro Gly Arg Ala Arg Gly Ser Ala  
   1                  5                  10                  15  
 Arg Pro Gly Arg Ala Arg Ala Pro Gly Arg Cys Ser Glu Asp Arg Ser  
           20                  25                  30  
 Ala Pro Gly Cys Ser Ala Pro Gly Ser Thr Gly Val Gly Pro Cys Gly  
           35                  40                  45  
 Ser Gly Cys Arg Arg His Arg Ala Ala Gly Ala Val Gly Cys Arg Cys  
           50                  55                  60  
 Ala Ala Cys Arg Gly Ile Arg Arg Arg Thr Ala Glu Ala Thr Pro Ser  
 65                  70                  75                  80  
 Gly Arg Ala Ala Ala Val Arg Pro Gly Gly Asp Gly Arg Ala Ala Gly  
                   85                  90                  95  
 Arg Ser Arg

<210> 346  
 <211> 375  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 346  
 ggcgggttgcc accagctccc gcaagcgacc gaggtcgacc ggtttggtga ggaagtcgaa 60  
 ggcaccggcc ttgagcgctt ggatcgcggt gtccaggctg ccgtacgcgg tgatcatggc 120

caccgggggtc	tgtggatggc	gctgctggat	gtactggacc	agatcgaggc	cgctgccgtc	180
cggcaggcgc	atgtcgggtga	ggcacaggctc	gaacgggtcgc	cgggccagca	actcgcggct	240
tccttgacgt	tgcggggcgt	gcgggtgtcc	agcttcacgc	ggccgagagt	gatttcacgc	300
agttcgcgga	tatccggttc	atcgtcgacg	atcagggttc	tttgtcggct	catgcgtgcg	360
gcttccgtca	gctga					375

<210> 347  
 <211> 124  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 347  
 Gly Gly Cys His Gln Leu Pro Gln Ala Thr Glu Val Asp Arg Phe Gly  
   1                  5                  10                  15  
 Glu Glu Val Glu Gly Thr Gly Leu Glu Arg Leu Asp Arg Gly Val Gln  
                   20                  25                  30  
 Ala Ala Val Arg Gly Asp His Gly His Arg Gly Leu Trp Met Ala Leu  
                   35                  40                  45  
 Leu Asp Val Leu Asp Gln Ile Glu Ala Ala Ala Val Arg Gln Ala His  
                   50                  55                  60  
 Val Gly Glu Ala Gln Val Glu Arg Leu Ala Gly Gln Gln Leu Ala Ala  
   65                  70                  75                  80  
 Ser Leu Thr Leu Arg Ala Leu Arg Val Ser Ser Phe Met Arg Pro Arg  
                   85                  90                  95  
 Val Ile Ser Ser Ser Ser Arg Ile Ser Gly Ser Ser Ser Thr Ile Arg  
                   100                  105                  110  
 Ala Phe Cys Arg Leu Met Arg Ala Ala Ser Val Ser  
                   115                  120

<210> 348  
 <211> 1302  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 348  
 accgatatc cgcaactgc tggaaatcac tctcgccgc atgaagctgg acaccgcag 60  
 cccccgaac gtcaaggaag ccgcgagttg ctggcccgcg agccgttcga cctgtgcctc 120  
 accgacatgc gcctgccgga cggcagcggc ctcgatctgg tccagtacat ccagcagcgc 180  
 catccacaga ccccggtggc catgatcacc gcgtacggca gcctggacac cgcgatccag 240  
 gcgctcaagg ccggtgcctt cgacttcctc accaaaccgg tcgacctcgg tcgcttgccg 300  
 gagctggtgg caaccgccct acgcttgccg aaccgggaag ccgaggaagc gccggtggac 360  
 aaccgctgc tcggcgagtc gccgccgatg cgcgcctgc gcaaccagat cggcaagctg 420  
 gcgcgcagcc aggcgcgggt ctacatcagt ggcgagtcgc gcagcggcaa ggaactggtg 480  
 gcgcgcctga tccacgagca ggggccacgt atcgagcggc cgttcgtgcc ggtgaactgc 540  
 ggcgcgattc cctccgagct gatggaaagc gagttcttcg gccacaagaa aggcagcttc 600  
 actggcgcta tcgaagacaa gcagggcctg ttccaggccg ccagcgggtg caccctgttc 660  
 ctcgacgaag tcgccgacct gccgatggcc atgcaggtca aactgctccg ggcgatccag 720  
 gaaaaggccg tcgcgcgggt cggcggccag caggaggtcg ccgtcgacg tgcgcatect 780  
 ctgcgccacc cacaaggacc tcgccgccga agtcggcgcc gggcgcttc gccaggacct 840  
 ctactaccgc ctcaacgtca tcgagctgcg cgtacaccgc tcgcggaac ccgcgaggac 900  
 atcccgtcg tcgccgaacg catcctcaag cgcctggccg gcgacaccgg cctgccggcc 960  
 gccaggctga ccggcgacgc acaggagaag ctgaagaact accgcttccc gggcaacgtc 1020  
 cgcgagctgg aaaacatgct ggagcgcgcc tatacctgt gcgaagacga ccagatccag 1080  
 cctcacgacc tcgccttgcc cgatgcgccg ggtgccagcc aggaaggcgc cgcgagcctg 1140  
 agcgaatcg acaacctcga ggactacctg gaagacatcg agcgcaagct gatcatgcag 1200  
 gactcagag agaccgctg gaaccgcacc gcccgggccc agcgctggg cctgacgttc 1260  
 cgctcgatgc gctaccgcct gaaaaagctg ggcacgcact ga 1302

<210> 349  
 <211> 433  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 349  
 Thr Gly Tyr Pro Arg Thr Ala Gly Asn His Ser Arg Pro His Glu Ala  
 1 5 10 15  
 Gly His Pro Gln Arg Pro Gln Arg Gln Gly Ser Arg Glu Leu Leu Ala  
 20 25 30  
 Arg Glu Pro Phe Asp Leu Cys Leu Thr Asp Met Arg Leu Pro Asp Gly  
 35 40 45  
 Ser Gly Leu Asp Leu Val Gln Tyr Ile Gln Gln Arg His Pro Gln Thr  
 50 55 60  
 Pro Val Ala Met Ile Thr Ala Tyr Gly Ser Leu Asp Thr Ala Ile Gln  
 65 70 75 80  
 Ala Leu Lys Ala Gly Ala Phe Asp Phe Leu Thr Lys Pro Val Asp Leu  
 85 90 95  
 Gly Arg Leu Arg Glu Leu Val Ala Thr Ala Leu Arg Leu Arg Asn Pro  
 100 105 110  
 Glu Ala Glu Glu Ala Pro Val Asp Asn Arg Leu Leu Gly Glu Ser Pro  
 115 120 125  
 Pro Met Arg Ala Leu Arg Asn Gln Ile Gly Lys Leu Ala Arg Ser Gln  
 130 135 140  
 Ala Pro Val Tyr Ile Ser Gly Glu Ser Gly Ser Gly Lys Glu Leu Val  
 145 150 155 160  
 Ala Arg Leu Ile His Glu Gln Gly Pro Arg Ile Glu Arg Pro Phe Val  
 165 170 175  
 Pro Val Asn Cys Gly Ala Ile Pro Ser Glu Leu Met Glu Ser Glu Phe  
 180 185 190  
 Phe Gly His Lys Lys Gly Ser Phe Thr Gly Ala Ile Glu Asp Lys Gln  
 195 200 205  
 Gly Leu Phe Gln Ala Ala Ser Gly Gly Thr Leu Phe Leu Asp Glu Val  
 210 215 220  
 Ala Asp Leu Pro Met Ala Met Gln Val Lys Leu Leu Arg Ala Ile Gln  
 225 230 235 240  
 Glu Lys Ala Val Arg Ala Val Gly Gly Gln Gln Glu Val Ala Val Ala  
 245 250 255  
 Arg Ala His Pro Leu Arg His Pro Gln Gly Pro Arg Arg Arg Ser Arg  
 260 265 270  
 Arg Arg Ala Leu Pro Pro Gly Pro Leu Leu Pro Pro Gln Arg His Arg  
 275 280 285  
 Ala Ala Arg Thr Pro Leu Arg Glu Arg Arg Glu Asp Ile Pro Leu Leu  
 290 295 300  
 Ala Glu Arg Ile Leu Lys Arg Leu Ala Gly Asp Thr Gly Leu Pro Ala  
 305 310 315 320  
 Ala Arg Leu Thr Gly Asp Ala Gln Glu Lys Leu Lys Asn Tyr Arg Phe  
 325 330 335  
 Pro Gly Asn Val Arg Glu Leu Glu Asn Met Leu Glu Arg Ala Tyr Thr  
 340 345 350  
 Leu Cys Glu Asp Asp Gln Ile Gln Pro His Asp Leu Arg Leu Ala Asp  
 355 360 365  
 Ala Pro Gly Ala Ser Gln Glu Gly Ala Ala Ser Leu Ser Glu Ile Asp  
 370 375 380  
 Asn Leu Glu Asp Tyr Leu Glu Asp Ile Glu Arg Lys Leu Ile Met Gln  
 385 390 395 400  
 Ala Leu Glu Glu Thr Arg Trp Asn Arg Thr Ala Ala Ala Gln Arg Leu  
 405 410 415  
 Gly Leu Thr Phe Arg Ser Met Arg Tyr Arg Leu Lys Lys Leu Gly Ile

Asp

<210> 350  
 <211> 1344  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 350  
 agctggacac ccgcagcgcc cgcaacgtca aggaagccgc gagttgctgg cccgcgagcc 60  
 gttcgacctg tgcctcaccg acatgcgcct gccggacggc agcggcctcg atctggtcca 120  
 gtacatccag cagcgccatc cacagacccc ggtggccatg atcaccgcgt acggcagcct 180  
 ggacaccgcy atccaggcgc tcaaggccgg tgccttcgac ttcctcacca aaccggtcga 240  
 cctcggtcgc ttgcggggagc tgggtggcaac cgccctacgc ttgcgcaacc cggaagccga 300  
 ggaagcgccg gtggacaacc gcctgctcgg cgagtcgccc ccgatgcgcg ccctgcgcaa 360  
 ccagatcggc aagctggcgc gcagccaggc gccggtctac atcagtggcg agtccggcag 420  
 cggcaaggaa ctggtggcgc gcctgatcca cgagcagggg ccacgtatcg agcggccgtt 480  
 cgtgccgggtg aactgcggcg cgattccctc cgagctgatg gaaagcgagt tcttcggcca 540  
 caagaaaggc agcttcactg gcgctatcga agacaagcag ggcctgttcc aggccgccag 600  
 cgggtggcacc ctgttcctcg acgaagtgcg cgacctgccg atggccatgc aggtcaaact 660  
 gctccggggcg atccaggaaa aggccgtgcg cgcggtcggc ggccagcagg aggtcgccgt 720  
 cgcacgtgcg catcctctgc gccaccaca aggacctcgc cgccgaagtc ggccgccggc 780  
 gcttcgcgca ggacctctac taccgcctca acgtcatcga gctgcgcgta caccgctgcg 840  
 cgaacgccgc gaggacatcc cgctgctcgc cgaacgcacg ctcaagcgcc tggccggcga 900  
 caccggcctg ccggccgcca ggctgaccgg cgacgcacag gagaagctga agaactaccg 960  
 cttcccgggc aacgtccgcg agctggaaaa catgctggag cgcgcctata ccctgtgcga 1020  
 agacgaccag atccagcctc acgacctgcg cctggccgat gcgcccgggtg ccagccagga 1080  
 aggcgccgcy agcctgagcy aaatcgacaa cctcgaggac tacctggaag acatcgagcy 1140  
 caagctgatc atgcaggcac tgcaggagac ccgctggaac cgcaccgccg cggcccagcy 1200  
 cctgggcctg acgttccgct cgatgcgcta ccgcctgaaa aagctgggca tcgactgaaa 1260  
 gtgaaaaggc ctgtccgaag acaggccttt tggttttcgc tcctcagagg cgaccagccg 1320  
 gggcgtaggg ggccgggtcg atga 1344

<210> 351  
 <211> 447  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 351  
 Ser Trp Thr Pro Ala Ala Pro Ala Thr Ser Arg Lys Pro Arg Val Ala  
 1 5 10 15  
 Gly Pro Arg Ala Val Arg Pro Val Pro His Arg His Ala Pro Ala Gly  
 20 25 30  
 Arg Gln Arg Pro Arg Ser Gly Pro Val His Pro Ala Ala Pro Ser Thr  
 35 40 45  
 Asp Pro Gly Gly His Asp His Arg Val Arg Gln Pro Gly His Arg Asp  
 50 55 60  
 Pro Gly Ala Gln Gly Arg Cys Leu Arg Leu Pro His Gln Thr Gly Arg  
 65 70 75 80  
 Pro Arg Ser Leu Ala Gly Ala Gly Gly Asn Arg Pro Thr Leu Ala Gln  
 85 90 95  
 Pro Gly Ser Arg Gly Ser Ala Gly Gly Gln Pro Pro Ala Arg Arg Val  
 100 105 110  
 Ala Ala Asp Ala Arg Pro Ala Gln Pro Asp Arg Gln Ala Gly Ala Gln  
 115 120 125  
 Pro Gly Ala Gly Leu His Gln Trp Arg Val Arg Gln Arg Gln Gly Thr  
 130 135 140

Gly	Gly	Ala	Pro	Asp	Pro	Arg	Ala	Gly	Ala	Thr	Tyr	Arg	Ala	Ala	Val
145				150						155					160
Arg	Ala	Gly	Glu	Leu	Arg	Arg	Asp	Ser	Leu	Arg	Ala	Asp	Gly	Lys	Arg
			165					170						175	
Val	Leu	Arg	Pro	Gln	Glu	Arg	Gln	Leu	His	Trp	Arg	Tyr	Arg	Arg	Gln
		180						185					190		
Ala	Gly	Pro	Val	Pro	Gly	Arg	Gln	Arg	Trp	His	Pro	Val	Pro	Arg	Arg
		195					200					205			
Ser	Arg	Arg	Pro	Ala	Asp	Gly	His	Ala	Gly	Gln	Thr	Ala	Pro	Gly	Asp
	210				215						220				
Pro	Gly	Lys	Gly	Arg	Ala	Arg	Gly	Arg	Arg	Pro	Ala	Gly	Gly	Arg	Arg
225				230						235					240
Arg	Thr	Cys	Ala	Ser	Ala	Pro	Pro	Thr	Arg	Thr	Ser	Pro	Pro	Lys	
			245					250					255		
Ser	Ala	Pro	Gly	Ala	Ser	Ala	Arg	Thr	Ser	Thr	Thr	Ala	Ser	Thr	Ser
		260					265						270		
Ser	Ser	Cys	Ala	Tyr	Thr	Ala	Ala	Arg	Thr	Pro	Arg	Gly	His	Pro	Ala
		275				280						285			
Ala	Arg	Arg	Thr	His	Pro	Gln	Ala	Pro	Gly	Arg	Arg	His	Arg	Pro	Ala
	290					295					300				
Gly	Arg	Gln	Ala	Asp	Arg	Arg	Thr	Gly	Glu	Ala	Glu	Glu	Leu	Pro	
305				310					315					320	
Leu	Pro	Gly	Gln	Arg	Pro	Arg	Ala	Gly	Lys	His	Ala	Gly	Ala	Arg	Leu
			325					330						335	
Tyr	Pro	Val	Arg	Arg	Arg	Pro	Asp	Pro	Ala	Ser	Arg	Pro	Ala	Pro	Gly
		340					345						350		
Arg	Cys	Ala	Gly	Cys	Gln	Pro	Gly	Arg	Arg	Arg	Glu	Pro	Glu	Arg	Asn
	355					360						365			
Arg	Gln	Pro	Arg	Gly	Leu	Pro	Gly	Arg	His	Arg	Ala	Gln	Ala	Asp	His
	370					375						380			
Ala	Gly	Thr	Arg	Gly	Asp	Pro	Leu	Glu	Pro	His	Arg	Arg	Gly	Pro	Ala
385					390					395					400
Pro	Gly	Pro	Asp	Val	Pro	Leu	Asp	Ala	Leu	Pro	Pro	Glu	Lys	Ala	Gly
			405					410						415	
His	Arg	Leu	Lys	Val	Lys	Arg	Pro	Val	Arg	Arg	Gln	Ala	Phe	Trp	Phe
		420						425					430		
Ser	Leu	Leu	Arg	Gly	Asp	Gln	Pro	Gly	Arg	Arg	Gly	Pro	Gly	Arg	
	435						440					445			

<210> 352  
 <211> 369  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 352	
accggcgccct ggctgcgcg cagcttgccg atctggttgc gcagggcgcg catcggcggc	60
gactcgccga gcaggcggtt gtccaccggc gcttcctcgg cttccgggtt gcgcaagcgt	120
agggcggttg ccaccagctc ccgcaagcga ccgaggtcga ccggtttggt gaggaagtcg	180
aaggcacccg ccttgagcgc ctggatcgcg gtgtccaggc tgccgtacgc ggtgatcatg	240
gccaccgggg tctgtggatg gcgctgctgg atgtactgga ccagatcgag gccgctgccg	300
tccggcaggc gcatgtcggg gaggcacagg tcgaacggct cgcgggccag caactcgcg	360
cttccttga	369

<210> 353  
 <211> 122  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 353  
 Thr Gly Ala Trp Leu Arg Ala Ser Leu Pro Ile Trp Leu Arg Arg Ala  
 1 5 10 15  
 Arg Ile Gly Gly Asp Ser Pro Ser Arg Leu Ser Thr Gly Ala Ser  
 20 25 30  
 Ser Ala Ser Gly Leu Arg Lys Arg Arg Ala Val Ala Thr Ser Ser Arg  
 35 40 45  
 Lys Arg Pro Arg Ser Thr Gly Leu Val Arg Lys Ser Lys Ala Pro Ala  
 50 55 60  
 Leu Ser Ala Trp Ile Ala Val Ser Arg Leu Pro Tyr Ala Val Ile Met  
 65 70 75 80  
 Ala Thr Gly Val Cys Gly Trp Arg Cys Trp Met Tyr Trp Thr Arg Ser  
 85 90 95  
 Arg Pro Leu Pro Ser Gly Arg Arg Met Ser Val Arg His Arg Ser Asn  
 100 105 110  
 Gly Ser Arg Ala Ser Asn Ser Arg Leu Pro  
 115 120

<210> 354  
 <211> 522  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 354  
 aggtcctggc ggaagcgccc ggcgccgact tcggcggcga ggtccttgtg ggtggcgag 60  
 aggatgcgca cgtgcgacgg cgacctcctg ctggccgccc accgcgcgca cggccttttc 120  
 ctggatcgcc cggagcagtt tgacctgcat ggccatcggc aggtcggcga cttcgtcgag 180  
 gaacagggtg ccaccgctgg cggcctggaa caggccctgc ttgtcttcga tagcgccagt 240  
 gaagctgcct ttcttgtggc cgaagaactc gctttccatc agctcggagg gaatcgcgcc 300  
 gcagttcacc ggcacgaacg gccgctcgat acgtggcccc tgctcgtgga tcaggcgcg 360  
 caccagttcc ttgccgctgc cggactcgcc actgatgtag accggcgcct ggctgcgcgc 420  
 cagcttgccg atctggttgc gcagggcgcg catcggcgcg gactcgccga gcaggcggtt 480  
 gtccaccggc gcttcctcgg cttccgggtt gcgcaagcgt ag 522

<210> 355  
 <211> 173  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 355  
 Arg Ser Trp Arg Lys Arg Pro Ala Pro Thr Ser Ala Ala Arg Ser Leu  
 1 5 10 15  
 Trp Val Ala Gln Arg Met Arg Thr Cys Asp Gly Asp Leu Leu Leu Ala  
 20 25 30  
 Ala Asp Arg Ala His Gly Leu Phe Leu Asp Arg Pro Glu Gln Phe Asp  
 35 40 45  
 Leu His Gly His Arg Gln Val Gly Asp Phe Val Glu Glu Gln Gly Ala  
 50 55 60  
 Thr Ala Gly Gly Leu Glu Gln Ala Leu Leu Val Phe Asp Ser Ala Ser  
 65 70 75 80  
 Glu Ala Ala Phe Leu Val Ala Glu Glu Leu Ala Phe His Gln Leu Gly  
 85 90 95  
 Gly Asn Arg Ala Ala Val His Arg His Glu Arg Pro Leu Asp Thr Trp  
 100 105 110  
 Pro Leu Leu Val Asp Gln Ala Arg His Gln Phe Leu Ala Ala Ala Gly  
 115 120 125  
 Leu Ala Thr Asp Val Asp Arg Arg Leu Ala Ala Arg Gln Leu Ala Asp  
 130 135 140

Leu Val Ala Gln Gly Ala His Arg Arg Arg Leu Ala Glu Gln Ala Val  
 145 150 155 160  
 Val His Arg Arg Phe Leu Gly Phe Arg Val Ala Gln Ala  
 165 170

<210> 356  
 <211> 411  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 356  
 ggcggtagta gaggtcctgg cggaagcgcc cggcgccgac ttcggcgggc aggtccttgt 60  
 gggtagcgca gaggatgcgc acgtgcgacg gcgacctcct gctggccgcc gaccgcgcgc 120  
 acggcctttt cctggatcgc ccggagcagt ttgacctgca tggccatcgg caggtcggcg 180  
 acttcgtcga ggaacagggt gccaccgctg cgggcctgga acaggccctg cttgtcttcg 240  
 atagcgccag tgaagctgcc tttcttgtgg ccgaagaact cgctttccat cagctcggag 300  
 ggaatcgcg cgcagttcac cggcacgaac ggccgctcga tacgtggccc ctgctcgtgg 360  
 atcaggcgcg ccaccagttc cttgccgctg ccggactcgc cactgatgta g 411

<210> 357  
 <211> 136  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 357  
 Gly Gly Ser Arg Gly Pro Gly Gly Ser Ala Arg Arg Arg Leu Arg Arg  
 1 5 10 15  
 Arg Gly Pro Cys Gly Trp Arg Arg Gly Cys Ala Arg Ala Thr Ala Thr  
 20 25 30  
 Ser Cys Trp Pro Pro Thr Ala Arg Thr Ala Phe Ser Trp Ile Ala Arg  
 35 40 45  
 Ser Ser Leu Thr Cys Met Ala Ile Gly Arg Ser Ala Thr Ser Ser Arg  
 50 55 60  
 Asn Arg Val Pro Pro Leu Ala Ala Trp Asn Arg Pro Cys Leu Ser Ser  
 65 70 75 80  
 Ile Ala Pro Val Lys Leu Pro Phe Leu Trp Pro Lys Asn Ser Leu Ser  
 85 90 95  
 Ile Ser Ser Glu Gly Ile Ala Pro Gln Phe Thr Gly Thr Asn Gly Arg  
 100 105 110  
 Ser Ile Arg Gly Pro Cys Ser Trp Ile Arg Arg Ala Thr Ser Ser Leu  
 115 120 125  
 Pro Leu Pro Asp Ser Pro Leu Met  
 130 135

<210> 358  
 <211> 408  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 358  
 tggaaagcga gttcttcggc cacaagaaaag gcagcttcac tggcgctatc gaagacaagc 60  
 agggcctgtt ccaggccgcc agcgggtggca ccctgttcct cgacgaagtc gccgacctgc 120  
 cgatggccat gcaggtcaaa ctgctccggg cgatccagga aaaggccgtg cgcgcggtcg 180  
 gcggccagca ggaggtcgcc gtcgcacgtg cgcacctct gcgccacca caaggacctc 240  
 gccgccgaag tcggcgccgg gcgcttcgc caggacctct actaccgcct caacgtcatc 300  
 gagctgcgag tacaccgctg cgcgaacgcc gcgaggacat cccgctgctc gccgaacgca 360  
 tcctcaagcg cctggccggc gacaccggcc tgccggccgc caggctga 408

<210> 359  
 <211> 135  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 359  
 Trp Lys Ala Ser Ser Ser Ala Thr Arg Lys Ala Ala Ser Leu Ala Leu  
 1 5 10 15  
 Ser Lys Thr Ser Arg Ala Cys Ser Arg Pro Pro Ala Val Ala Pro Cys  
 20 25 30  
 Ser Ser Thr Lys Ser Pro Thr Cys Arg Trp Pro Cys Arg Ser Asn Cys  
 35 40 45  
 Ser Gly Arg Ser Arg Lys Arg Pro Cys Ala Arg Ser Ala Ala Ser Arg  
 50 55 60  
 Arg Ser Pro Ser His Val Arg Ile Leu Cys Ala Thr His Lys Asp Leu  
 65 70 75 80  
 Ala Ala Glu Val Gly Ala Gly Arg Phe Arg Gln Asp Leu Tyr Tyr Arg  
 85 90 95  
 Leu Asn Val Ile Glu Leu Arg Val His Arg Cys Ala Asn Ala Ala Arg  
 100 105 110  
 Thr Ser Arg Cys Ser Pro Asn Ala Ser Ser Ser Ala Trp Pro Ala Thr  
 115 120 125  
 Pro Ala Cys Arg Pro Pro Gly  
 130 135

<210> 360  
 <211> 504  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 360  
 ggagcgaaaa ccaaaaggcc tgtcttcgga caggcctttt cacttttcagt cgatgcccag 60  
 ctttttcagg cggtagcgca tcgagcggaa cgtcaggccc aggcgctggg ccgcggcggt 120  
 gcggttccag cgggtctcct cgagtgcctg catgatcagc ttgcgctcga tgtcttccag 180  
 gtagtctctg aggttgctga tttcgctcag gctcgcggcg ccttcctggc tggcaccggg 240  
 cgcacgcggc aggcgcaggt cgtgaggctg gatctggtcg tcttcgcaca gggatataggc 300  
 gcgctccagc atgttttcca gctcgcggac gttgcccggg aagcggtagt tcttcagctt 360  
 ctctgtgctg tcgccggtca gcctggcggc cggcaggccg gtgtcgccgg ccaggcgctt 420  
 gaggatgcgt tcggcgagca gcgggatgtc ctgcgcggcg tcgcgcagcg gtgtacgcgc 480  
 agctcgatga cggtgaggcg gtag 504

<210> 361  
 <211> 167  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 361  
 Gly Ala Lys Thr Lys Arg Pro Val Phe Gly Gln Ala Phe Ser Leu Ser  
 1 5 10 15  
 Val Asp Ala Gln Leu Phe Gln Ala Val Ala His Arg Ala Glu Arg Gln  
 20 25 30  
 Ala Gln Ala Leu Gly Arg Gly Gly Ala Val Pro Ala Gly Leu Leu Glu  
 35 40 45  
 Cys Leu His Asp Gln Leu Ala Leu Asp Val Phe Gln Val Val Leu Glu  
 50 55 60  
 Val Val Asp Phe Ala Gln Ala Arg Gly Ala Phe Leu Ala Gly Thr Arg  
 65 70 75 80  
 Arg Ile Gly Gln Ala Gln Val Val Arg Leu Asp Leu Val Val Phe Ala

				85					90					95					
Gln	Gly	Ile	Gly	Ala	Leu	Gln	His	Val	Phe	Gln	Leu	Ala	Asp	Val	Ala				
			100					105					110						
Arg	Glu	Ala	Val	Val	Leu	Gln	Leu	Leu	Cys	Val	Ala	Gly	Gln	Pro					
		115					120					125							
Gly	Gly	Arg	Gln	Ala	Gly	Val	Ala	Gly	Gln	Ala	Leu	Glu	Asp	Ala	Phe				
	130					135					140								
Gly	Glu	Gln	Arg	Asp	Val	Leu	Ala	Ala	Phe	Ala	Gln	Arg	Cys	Thr	Arg				
145					150				155						160				
Ser	Ser	Met	Thr	Leu	Arg	Arg													
				165															

<210> 362  
 <211> 744  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 362																			
acagacggag	gtgcgcggct	ggttgcgcca	cggcgatcga	gtggctcggcg	tggcgacctc													60	
gcgtggcgag	atccgtggcg	acaagtgct	gctggcggca	ggcgccctgga	gcggcgagtt													120	
gttgaagccg	cttggcctgg	aactgcccgt	ggtaccgggtg	aaaggtcaga	tgatcctcta													180	
caagtgcgcg	gcggatttcc	tgccgcgcag	ggtgctggcc	aaggggcgct	acgcgattcc													240	
gcggcgcgac	ggccacatcc	tgatcggcag	caccttgga	cattcgggct	tcgacaagac													300	
gccgaccgac	gaggcgctgg	aaagcctcag	ggcgtctgcg	gcagaactgt	tgccggaact													360	
ggcggacatg	cagccggtgg	cccactgggc	aggggtgcgc	ccgggctctc	ccgaaggcat													420	
cccctatatc	ggtccgggtgc	ctggcttcga	cgggctctgg	ctgaataaccg	ggcactaccg													480	
caacgggctg	gtcctggcac	cggcgctcgtg	ccgtctgctg	gcggatctca	tgagcgggcg													540	
ggaaccgatc	atcgaccggg	cccctacgc	cccggctggt	cgccctctgag	gagcgaaaac													600	
caaaaggcct	gtcttcggac	aggccttttc	actttcagtc	gatgccccagc	tttttcaggc													660	
ggtagcgcat	cgagcggaac	gtcaggccca	ggcgctgggc	cgcggcgggtg	cggttccagc													720	
gggtctctctc	gagtgcctgc	atga																744	

<210> 363  
 <211> 247  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 363																			
Thr	Asp	Gly	Gly	Ala	Arg	Leu	Val	Ala	Arg	Arg	Arg	Ser	Ser	Gly	Arg				
1				5				10						15					
Arg	Gly	Asp	Leu	Ala	Trp	Arg	Asp	Pro	Trp	Arg	Gln	Gly	Ala	Ala	Gly				
		20						25					30						
Gly	Arg	Arg	Leu	Glu	Arg	Arg	Val	Glu	Ala	Ala	Trp	Pro	Gly	Thr					
		35					40					45							
Ala	Arg	Gly	Thr	Gly	Glu	Arg	Ser	Asp	Asp	Pro	Leu	Gln	Val	Arg	Gly				
	50					55					60								
Gly	Phe	Pro	Ala	Ala	His	Gly	Ala	Gly	Gln	Gly	Ala	Leu	Arg	Asp	Ser				
65					70				75					80					
Ala	Ala	Arg	Arg	Pro	His	Pro	Asp	Arg	Gln	His	Leu	Gly	Thr	Phe	Gly				
				85				90						95					
Leu	Arg	Gln	Asp	Ala	Asp	Arg	Arg	Gly	Ala	Gly	Lys	Pro	Gln	Gly	Val				
		100						105					110						
Cys	Gly	Arg	Thr	Val	Ala	Gly	Thr	Gly	Gly	His	Ala	Ala	Gly	Gly	Pro				
		115					120					125							
Leu	Gly	Arg	Val	Ala	Pro	Gly	Leu	Ser	Arg	Arg	His	Pro	Leu	Tyr	Arg				
	130					135					140								
Ser	Gly	Ala	Trp	Leu	Arg	Ala	Leu	Ala	Glu	Tyr	Arg	Ala	Leu	Pro					
145					150				155					160					

Gln	Arg	Ala	Gly	Pro	Gly	Thr	Gly	Val	Val	Pro	Ser	Ala	Gly	Gly	Ser
				165					170					175	
His	Glu	Arg	Ala	Gly	Thr	Asp	His	Arg	Pro	Gly	Pro	Leu	Arg	Pro	Gly
			180					185					190		
Trp	Ser	Pro	Leu	Arg	Ser	Glu	Asn	Gln	Lys	Ala	Cys	Leu	Arg	Thr	Gly
		195					200				205				
Leu	Phe	Thr	Phe	Ser	Arg	Cys	Pro	Ala	Phe	Ser	Gly	Gly	Ser	Ala	Ser
	210					215					220				
Ser	Gly	Thr	Ser	Gly	Pro	Gly	Ala	Gly	Pro	Arg	Arg	Cys	Gly	Ser	Ser
225					230					235					240
Gly	Ser	Pro	Arg	Val	Pro	Ala									
				245											

<210> 364  
 <211> 675  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 364

aaaggcctgt	ccgaagacag	gccttttggg	tttcgctcct	cagaggcgac	cagccggggc	60
gtagggggcc	gggtcgatga	tcggttccc	cccgcctcatg	agatccgcca	gcagacggca	120
cgagcccggt	gccaggacca	gcccgttgcg	gtagtgcgcg	gtattcagcc	agagcccgtc	180
gaagccaggc	accggaccga	tataggggat	gccttcggga	gagcccgggc	gcaaccctgc	240
ccagtggggc	accggctgca	tgtccgccag	ttccggcaac	agttctgccc	cagacgccct	300
gaggctttcc	agcgcctcgt	cggtcggcgt	cttgtcgaag	cccgaatgtt	ccaaggtgct	360
gccgatcagg	atgtggccgt	cgcgcgcgcg	aatcgcgtag	cgccccttgg	ccagcaccat	420
gcgcggcagg	aaatccgcgc	cgcacttgta	gaggatcatc	tgacctttca	ccggtaccac	480
gggcagttcc	aggccaagcg	gcttcaacaa	ctcgccgctc	caggcgccctg	ccgccagcag	540
caccttgctc	ccacggatct	cgccacgcga	ggtcgccacg	ccgaccactc	gatcgccgtc	600
gcgcaaccag	ccgcgcacct	ccgtctgttc	atgcaactcg	agattggcga	attgtgtcag	660
ggatgcccg	aatga					675

<210> 365  
 <211> 224  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 365

Lys	Gly	Leu	Ser	Glu	Asp	Arg	Pro	Phe	Gly	Phe	Arg	Ser	Ser	Glu	Ala
1				5					10					15	
Thr	Ser	Arg	Gly	Val	Gly	Gly	Arg	Val	Asp	Asp	Arg	Phe	Pro	Pro	Ala
			20					25					30		
His	Glu	Ile	Arg	Gln	Gln	Thr	Ala	Arg	Arg	Arg	Cys	Gln	Asp	Gln	Pro
	35						40					45			
Val	Ala	Val	Val	Pro	Gly	Ile	Gln	Pro	Glu	Pro	Val	Glu	Ala	Arg	His
	50					55					60				
Arg	Thr	Asp	Ile	Gly	Asp	Ala	Phe	Gly	Arg	Ala	Arg	Ala	Gln	Pro	Cys
65					70				75					80	
Pro	Val	Gly	His	Arg	Leu	His	Val	Arg	Gln	Phe	Arg	Gln	Gln	Phe	Cys
			85					90						95	
Arg	Arg	Arg	Pro	Glu	Ala	Phe	Gln	Arg	Leu	Val	Gly	Arg	Arg	Leu	Val
			100					105					110		
Glu	Ala	Arg	Met	Phe	Gln	Gly	Ala	Ala	Asp	Gln	Asp	Val	Ala	Val	Ala
			115				120					125			
Pro	Arg	Asn	Arg	Val	Ala	Pro	Leu	Gly	Gln	His	His	Ala	Arg	Gln	Glu
	130					135					140				
Ile	Arg	Arg	Ala	Leu	Val	Glu	Asp	His	Leu	Thr	Phe	His	Arg	Tyr	His
145					150					155					160

Gly Gln Phe Gln Ala Lys Arg Leu Gln Gln Leu Ala Ala Pro Gly Ala  
165 170 175  
Cys Arg Gln Gln His Leu Val Ala Thr Asp Leu Ala Thr Arg Gly Arg  
180 185 190  
His Ala Asp His Ser Ile Ala Val Ala Gln Pro Ala Ala His Leu Arg  
195 200 205  
Leu Phe Met Gln Leu Glu Ile Gly Glu Leu Leu Gln Gly Cys Pro Gln  
210 215 220

<210> 366  
<211> 1137  
<212> DNA  
<213> Pseudomonas aeruginosa

<400> 366  
gtgatatttc tctgttccctg gcaaatacggt aggagccctg tgggtgagtag agatgtagta 60  
gtggttaggcg ctggcgctcat cggcctgttg accgcccggg agctggcgct cgccggactg 120  
cgggtgaccc tgggtggagcg gggcgagagt gggcgtgagg catcctgggc gggaggcggg 180  
atcgtctcgc cgctctatcc gtggcgctac agcccggcgg tgaccgccct ggcgcactgg 240  
tcgcaggact tctaccgggc cctggggcag cgtttgctcg acgagaccgg gctcgatccc 300  
gaggtccata ccgttggcct gtactggctg gacctggacg accagaccga ggcactgcag 360  
tgggcacgca accacacccg gccgttgaag gaagtgccga tcgaggaggc ctacgcggcg 420  
gtgcccgggc tgggcgcagg cttccagcgg gcggtctaca tgtcgggcgt ggccaatgtg 480  
cgcaatcctc gcctggcgcg ctcattgcgg gcatccctgc aacaattcgc caatctcgag 540  
ttgcatgaac agacggaggt gcgcggctgg ttgcgcgacg gcgatcgagt ggtcggcggtg 600  
gcgacctcgc gtggcgagat ccgtggcgac aaggtgctgc tggcggcagg cgctggagc 660  
ggcgagttgt tgaagccgct tggcctggaa ctgcccgtgg taccggtgaa aggtcagatg 720  
atcctctaca agtgcgcggc ggatttcctg ccgcgcacgg tgctggccaa ggggcgctac 780  
gcgattccgc ggcgcgacgg ccacatcctg atcggcagca ccttggaaaca ttcgggcttc 840  
gacaagacgc cgaccgacga ggcgctggaa agcctcaggg cgtctgcggc agaactggtg 900  
ccggaactgg cggacatgca gccggtggcc cactgggcag ggttgcgccc gggctctccc 960  
gaaggcatcc cctatatcgg tccggtgcct ggcttcgacg ggctctggct gaataccggg 1020  
cactaccgca acgggctggt cctggcaccg gcgtcgtgcc gtctgctggc ggatctcatg 1080  
agcgggcggg aaccgatcat cgacccggcc ccctacgccc cggctggtcg cctctga 1137

<210> 367  
<211> 378  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 367  
Val Ile Phe Leu Cys Ser Trp Gln Ile Gly Arg Ser Pro Val Val Ser  
1 5 10 15  
Arg Asp Val Val Val Val Gly Ala Gly Val Ile Gly Leu Leu Thr Ala  
20 25 30  
Arg Glu Leu Ala Leu Ala Gly Leu Arg Val Thr Leu Val Glu Arg Gly  
35 40 45  
Glu Ser Gly Arg Glu Ala Ser Trp Ala Gly Gly Gly Ile Val Ser Pro  
50 55 60  
Leu Tyr Pro Trp Arg Tyr Ser Pro Ala Val Thr Ala Leu Ala His Trp  
65 70 75 80  
Ser Gln Asp Phe Tyr Pro Ala Leu Gly Gln Arg Leu Leu Asp Glu Thr  
85 90 95  
Gly Leu Asp Pro Glu Val His Thr Val Gly Leu Tyr Trp Leu Asp Leu  
100 105 110  
Asp Asp Gln Thr Glu Ala Leu Gln Trp Ala Arg Asn His Thr Arg Pro  
115 120 125  
Leu Lys Glu Val Pro Ile Glu Glu Ala Tyr Ala Ala Val Pro Gly Leu

130	135	140
Gly Ala Gly Phe Gln Arg Ala Val Tyr Met Ser Gly Val Ala Asn Val		
145	150	155
Arg Asn Pro Arg Leu Ala Arg Ser Leu Arg Ala Ser Leu Gln Gln Phe		
	165	170
Ala Asn Leu Glu Leu His Glu Gln Thr Glu Val Arg Gly Trp Leu Arg		
	180	185
Asp Gly Asp Arg Val Val Gly Val Ala Thr Ser Arg Gly Glu Ile Arg		
	195	200
Gly Asp Lys Val Leu Leu Ala Ala Gly Ala Trp Ser Gly Glu Leu Leu		
	210	215
Lys Pro Leu Gly Leu Glu Leu Pro Val Val Pro Val Lys Gly Gln Met		
225	230	235
Ile Leu Tyr Lys Cys Ala Ala Asp Phe Leu Pro Arg Met Val Leu Ala		
	245	250
Lys Gly Arg Tyr Ala Ile Pro Arg Arg Asp Gly His Ile Leu Ile Gly		
	260	265
Ser Thr Leu Glu His Ser Gly Phe Asp Lys Thr Pro Thr Asp Glu Ala		
	275	280
Leu Glu Ser Leu Arg Ala Ser Ala Ala Glu Leu Leu Pro Glu Leu Ala		
	290	295
Asp Met Gln Pro Val Ala His Trp Ala Gly Leu Arg Pro Gly Ser Pro		
305	310	315
Glu Gly Ile Pro Tyr Ile Gly Pro Val Pro Gly Phe Asp Gly Leu Trp		
	325	330
Leu Asn Thr Gly His Tyr Arg Asn Gly Leu Val Leu Ala Pro Ala Ser		
	340	345
Cys Arg Leu Leu Ala Asp Leu Met Ser Gly Arg Glu Pro Ile Ile Asp		
	355	360
Pro Ala Pro Tyr Ala Pro Ala Gly Arg Leu		
	370	375

<210> 368  
 <211> 798  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 368	
ggctttccag cgctctgctcg gtcggcgctct tgtcgaagcc cgaatgttcc aaggtgctgc	60
cgatcaggat gtggccgctcg cgccgcggaa tcgcgtagcg ccccttggcc agcaccatgc	120
gcggcaggaa atccgccgcy cacttgtaga ggatcatctg acctttcacc ggtaccacgg	180
gcagttccag gccaagcggc ttcaacaact cgccgctcca ggcgcctgcc gccagcagca	240
ccttgctgcc acgcatctcg ccacgcgagg tcgccacgcc gaccactcga tcgccgtcgc	300
gcaaccagcc gcgcacctcc gtctgttcat gcaactcgag attggcgaat tgttgtaggg	360
atgcccgaat tgagcgcgcc aggcgaggat tgcgcacatt ggccacgccc gacatgtaga	420
ccgcccgtcg gaagcctgcy cccagcccgg gcaccgcccgc gtaggcctcc tcgatcggca	480
cttccttcaa cggccgggtg tggttgcgtg cccactgcag tgcctcggtc tggtcgtcca	540
ggtccagcca gtacaggcca acggtatgga cctcgggatc gagcccggtc tcgtcgagca	600
aacgctgccc cagggccggg tagaagtcct gcgaccagtg cgccagggcg gtcaccgccc	660
ggctgtagcg ccacggatag agcggcgaga cgatccccgc tcccggccag gatgcctcac	720
gccactctc gcccgcctcc accagggta cccgcagtcc ggcgagcgcc agctccccggg	780
cggtaacag gccgatga	798

<210> 369  
 <211> 265  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 369  
 Gly Phe Pro Ala Pro Arg Arg Ser Ala Ser Cys Arg Ser Pro Asn Val  
 1 5 10 15  
 Pro Arg Cys Cys Arg Ser Gly Cys Gly Arg Arg Ala Ala Glu Ser Arg  
 20 25 30  
 Ser Ala Pro Trp Pro Ala Pro Cys Ala Ala Gly Asn Pro Pro Arg Thr  
 35 40 45  
 Cys Arg Gly Ser Ser Asp Leu Ser Pro Val Pro Arg Ala Val Pro Gly  
 50 55 60  
 Gln Ala Ala Ser Thr Thr Arg Arg Ser Arg Arg Leu Pro Pro Ala Ala  
 65 70 75 80  
 Pro Cys Arg His Gly Ser Arg His Ala Arg Ser Pro Arg Arg Pro Leu  
 85 90 95  
 Asp Arg Arg Arg Ala Thr Ser Arg Ala Pro Pro Ser Val His Ala Thr  
 100 105 110  
 Arg Asp Trp Arg Ile Val Ala Gly Met Pro Ala Met Ser Ala Pro Gly  
 115 120 125  
 Glu Asp Cys Ala His Trp Pro Arg Pro Thr Cys Arg Pro Pro Ala Gly  
 130 135 140  
 Ser Leu Arg Pro Ala Arg Ala Pro Pro Arg Arg Pro Pro Arg Ser Ala  
 145 150 155 160  
 Leu Pro Ser Thr Ala Gly Cys Gly Cys Val Pro Thr Ala Val Pro Arg  
 165 170 175  
 Ser Gly Arg Pro Gly Pro Ala Ser Thr Gly Gln Arg Tyr Gly Pro Arg  
 180 185 190  
 Asp Arg Ala Arg Ser Arg Arg Ala Asn Ala Ala Pro Gly Pro Gly Arg  
 195 200 205  
 Ser Pro Ala Thr Ser Ala Pro Gly Arg Ser Pro Pro Gly Cys Ser Ala  
 210 215 220  
 Thr Asp Arg Ala Ala Arg Arg Ser Arg Leu Pro Pro Arg Met Pro His  
 225 230 235 240  
 Ala His Ser Arg Pro Ala Pro Pro Gly Ser Pro Ala Val Arg Arg Ala  
 245 250 255  
 Pro Ala Pro Gly Arg Ser Thr Gly Arg  
 260 265

<210> 370  
 <211> 390  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 370  
 ggcacacctgg gcgggaggcg ggatcgtctc gccgctctat ccgtggcgct acagcccggc 60  
 ggtgaccgcc ctggcgcaact ggtcgcagga cttctaccgg gccctggggc agcgtttgct 120  
 cgacgagacc gggctcgatc ccgaggtcca taccgttggc ctgtactggc tggacctgga 180  
 cgaccagacc gaggcactgc agtgggcacg caaccacacc cggccgttga aggaagtgcc 240  
 gatcgaggag gcctacgcgg cggtgcccgg gctggggcga ggcttccagc gggcgggtcta 300  
 catgtcgggc gtggccaatg tgcgcaatcc tcgcctggcg cgctcattgc gggcatccct 360  
 gcaacaattc gccaatctcg agttgcatga 390

<210> 371  
 <211> 129  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 371  
 Gly Ile Leu Gly Gly Arg Arg Asp Arg Leu Ala Ala Leu Ser Val Ala  
 1 5 10 15

Leu Gln Pro Gly Gly Asp Arg Pro Gly Ala Leu Val Ala Gly Leu Leu  
                   20                  25                  30  
 Pro Gly Pro Gly Ala Ala Phe Ala Arg Arg Asp Arg Ala Arg Ser Arg  
                   35                  40                  45  
 Gly Pro Tyr Arg Trp Pro Val Leu Ala Gly Pro Gly Arg Pro Asp Arg  
                   50                  55                  60  
 Gly Thr Ala Val Gly Thr Gln Pro His Pro Ala Val Glu Gly Ser Ala  
 65                  70                  75                  80  
 Asp Arg Gly Gly Leu Arg Gly Gly Ala Arg Ala Gly Arg Arg Leu Pro  
                   85                  90                  95  
 Ala Gly Gly Leu His Val Gly Arg Gly Gln Cys Ala Gln Ser Ser Pro  
                   100                  105                  110  
 Gly Ala Leu Ile Ala Gly Ile Pro Ala Thr Ile Arg Gln Ser Arg Val  
                   115                  120                  125  
 Ala

<210> 372  
 <211> 603  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 372  
 gcgcgccagg cgaggattgc gcacattggc caccgcccagc atgtagaccg cccgctggaa 60  
 gcctgcgccc agcccgggca ccgcccgcgt ggcctcctcg atcggcactt ccttcaacgg 120  
 ccgggtgtgg ttgcgtgccc actgcagtgc ctccggtctgg tcgtccagggt ccagccagta 180  
 caggccaacg gtatggacct cgggatcgag cccggtctcg tcgagcaaac gctgccccag 240  
 ggccgggtag aagtcctgcg accagtgcgc cagggcggtc accgcccggg tgtagcgcca 300  
 cgatagagc ggcgagacga tcccgcctcc cgcccaggat gcctcacgcc cactctcgcc 360  
 ccgctccacc agggtcaccc gcagtccggc gagcgccagc tcccgggagg tcaacaggcc 420  
 gatgacgcca gcgcctacca ctactacatc tctactcacc acagggctcc taccgatttg 480  
 ccaggaacag agaaatatca ctcaaaggga tcagatgctg acgaattgcc tgcttcaacg 540  
 aactcagtcg aatctagtcc cggtgaaaag cccatcatat ccgcagaggt attcatccca 600  
 tga 603

<210> 373  
 <211> 200  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 373  
 Ala Arg Gln Ala Arg Ile Ala His Ile Gly His Ala Arg His Val Asp  
   1                  5                  10                  15  
 Arg Pro Leu Glu Ala Cys Ala Gln Pro Gly His Arg Arg Val Gly Leu  
                   20                  25                  30  
 Leu Asp Arg His Phe Leu Gln Arg Pro Gly Val Val Ala Cys Pro Leu  
                   35                  40                  45  
 Gln Cys Leu Gly Leu Val Val Gln Val Gln Pro Val Gln Ala Asn Gly  
                   50                  55                  60  
 Met Asp Leu Gly Ile Glu Pro Gly Leu Val Glu Gln Thr Leu Pro Gln  
 65                  70                  75                  80  
 Gly Arg Val Glu Val Leu Arg Pro Val Arg Gln Gly Gly His Arg Arg  
                   85                  90                  95  
 Ala Val Ala Pro Arg Ile Glu Arg Arg Asp Asp Pro Ala Ser Arg Pro  
                   100                  105                  110  
 Gly Cys Leu Thr Pro Thr Leu Ala Pro Leu His Gln Gly His Pro Gln  
                   115                  120                  125  
 Ser Gly Glu Arg Gln Leu Pro Gly Gly Gln Gln Ala Asp Asp Ala Ser



cccgacagaa	tgaagcggga	cattagccgt	gatattgggtg	acagcctgac	tagtcatgtg	180
atggctgctg	gggctagcag	catacagaac	ggcgtgatca	tcgaggtgtg	cggtagcggg	240
gacggcagta	cctgcagcga	ggaatggcat	ctcggctggg	tcagccgtaa	cgacaggagc	300
caacagatac	tggcccggca	tgaaaatacg	agtcgcaccg	atattcattg	gcggggcttc	360
gacaagcgac	tgcgctacct	gcctaattgg	accagcccta	caggtaacgg	gcgtttcttc	420
gaatgtaagg	acgatcgcat	cgagtggcaa	ttggtgctca	atcggcaagg	ccgcctcagg	480
gtggcgggaa	agagcgaaaa	taaaaagctc	tcttacctgt	gctccaggcg	gtga	534

<210> 377

<211> 177

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 377

Lys	Ala	His	His	Thr	Arg	Arg	Gly	Ile	His	Pro	Met	Lys	Ser	Ser	Gly
1				5				10						15	
Leu	Asn	Leu	Val	Glu	Leu	Ser	Ile	Val	Leu	Ser	Ile	Leu	Ala	Ile	Gly
			20					25					30		
Val	Thr	Ile	Ala	Leu	Pro	Thr	Leu	Pro	Asp	Arg	Met	Lys	Arg	Asp	Ile
		35					40					45			
Ser	Arg	Asp	Ile	Gly	Asp	Ser	Leu	Thr	Ser	His	Val	Met	Ala	Ala	Arg
	50					55					60				
Ala	Ser	Ser	Ile	Gln	Asn	Gly	Val	Ile	Ile	Glu	Val	Cys	Gly	Ser	Gly
65					70					75					80
Asp	Gly	Ser	Thr	Cys	Ser	Glu	Glu	Trp	His	Leu	Gly	Trp	Phe	Ser	Arg
				85					90					95	
Asn	Asp	Arg	Ser	Gln	Gln	Ile	Leu	Ala	Arg	His	Glu	Asn	Thr	Ser	Arg
			100					105						110	
Thr	Asp	Ile	His	Trp	Arg	Gly	Phe	Asp	Lys	Arg	Leu	Arg	Tyr	Leu	Pro
		115					120					125			
Asn	Gly	Thr	Ser	Pro	Thr	Gly	Asn	Gly	Arg	Phe	Phe	Glu	Cys	Lys	Asp
	130					135					140				
Asp	Arg	Ile	Glu	Trp	Gln	Leu	Val	Leu	Asn	Arg	Gln	Gly	Arg	Leu	Arg
145					150					155					160
Val	Ala	Gly	Lys	Ser	Glu	Asn	Lys	Lys	Leu	Ser	Tyr	Leu	Cys	Ser	Arg
				165					170					175	

Arg

<210> 378

<211> 540

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 378

tggagagcgc	attgtccctg	tagcagagac	agccggagcg	gagagtggga	tgactggcaa	60
acggtatgtg	aaacagttct	ctcaccgcct	ggagcacagg	taagagagct	ttttattttc	120
gctctttccc	gccaccctga	ggcggccttg	ccgattgagc	accaattgcc	actcgatgcg	180
atcgtcctta	cattcgaaga	aacgcccgtt	acctgtaggg	ctggtgccat	taggcaggta	240
gcgcagtcgc	ttgtcgaagc	cccgccaatg	aatatcgggtg	cgactcgtat	tttcatgccg	300
ggccagtatc	tgttggctcc	tgctggttacg	gctgaaccag	ccgagatgcc	attcctcgct	360
gcaggtactg	ccgtcaccgc	taccgcacac	ctcgatgatc	acgccgttct	gtatgctgct	420
agcccgcgca	gccatcacat	gactagtcag	gctgtcacca	atatcacggc	taatgtccccg	480
cttcattctg	tcggggaggg	tgggcagcgc	aattgtcacg	cctatcgcaa	ggatcgatag	540

<210> 379

<211> 179

<212> PRT

<213> Pseudomonas aeruginosa

<400> 379

```
Trp Arg Ala His Cys Pro Cys Ser Arg Asp Ser Arg Ser Gly Glu Trp
1          5          10          15
Asp Asp Trp Gln Thr Val Cys Glu Thr Val Leu Ser Pro Pro Gly Ala
20          25          30
Gln Val Arg Glu Leu Phe Ile Phe Ala Leu Ser Arg His Pro Glu Ala
35          40          45
Ala Leu Pro Ile Glu His Gln Leu Pro Leu Asp Ala Ile Val Leu Thr
50          55          60
Phe Glu Glu Thr Pro Val Thr Cys Arg Ala Gly Ala Ile Arg Gln Val
65          70          75          80
Ala Gln Ser Leu Val Glu Ala Pro Pro Met Asn Ile Gly Ala Thr Arg
85          90          95
Ile Phe Met Pro Gly Gln Tyr Leu Leu Ala Pro Val Val Thr Ala Glu
100         105         110
Pro Ala Glu Met Pro Phe Leu Ala Ala Gly Thr Ala Val Thr Ala Thr
115         120         125
Ala His Leu Asp Asp His Ala Val Leu Tyr Ala Ala Ser Pro Arg Ser
130         135         140
His His Met Thr Ser Gln Ala Val Thr Asn Ile Thr Ala Asn Val Pro
145         150         155         160
Leu His Ser Val Gly Glu Gly Gly Gln Arg Asn Cys His Ala Tyr Arg
165         170         175
Lys Asp Arg
```

<210> 380

<211> 402

<212> DNA

<213> Pseudomonas aeruginosa

<400> 380

```
tcacgcaggt gtgcggtagc ggtgacggca gtacctgcag cgaggaatgg catctcggct 60
ggttcagccg taacgacagg agccaacaga tactggcccg gcatgaaaat acgagtcgca 120
ccgatattca ttggcggggc ttcgacaagc gactgcgcta cctgcctaata ggcaccagcc 180
ctacaggtaa cgggcgtttc ttcgaatgta aggacgatcg catcgagtgg caattggtgc 240
tcaatcggca aggccgcctc aggggtggcgg gaaagagcga aaataaaaag ctctcttacc 300
tgtgtctccag gcggtgagag aactgtttca cataccgttt gccagtcatc ccactctccg 360
ctccggctgt ctctgctaca gggacaatgc gctctccact ag 402
```

<210> 381

<211> 133

<212> PRT

<213> Pseudomonas aeruginosa

<400> 381

```
Ser Ser Arg Cys Ala Val Ala Val Thr Ala Val Pro Ala Ala Arg Asn
1          5          10          15
Gly Ile Ser Ala Gly Ser Ala Val Thr Thr Gly Ala Asn Arg Tyr Trp
20          25          30
Pro Gly Met Lys Ile Arg Val Ala Pro Ile Phe Ile Gly Gly Ala Ser
35          40          45
Thr Ser Asp Cys Ala Thr Cys Leu Met Ala Pro Ala Leu Gln Val Thr
50          55          60
Gly Val Ser Ser Asn Val Arg Thr Ile Ala Ser Ser Gly Asn Trp Cys
```



Thr Val Gln Pro Ser Gly Arg Val Ile Leu Tyr Pro Ser Ser Lys Gln  
 195 200 205  
 Pro Asp Ser Cys Asn  
 210

<210> 384  
 <211> 444  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 384  
 cgagacctgc tggaaacctt ggtgcttttg cacgggtggtc gcgccgctga tgattttccag 60  
 gcctttttgcc cagtcattgt tctgcgtcgc cctgatgctc acattggcat gacgggtttac 120  
 agcttcgctg cgagcgtact gaagcaggct gtagagttcc tcgctggcag tctggattcg 180  
 gttgcgctcg atcaaggcgt tgaaactggg tacggcaatg ctggcgaata tggcgaccag 240  
 aaccaacacc atcatcaact cgatcaggga aaagccggcg ctgcgacaaa tagagcgcat 300  
 gcagtactcc acaaggaaaa gggccagata atcttgcccta gtggagagcg cattgtccct 360  
 gtagcagaga cagccggagc ggagagtggg atgactggca aacggtatgt gaaacagttc 420  
 tctcaccgcc tggagcacag gtaa 444

<210> 385  
 <211> 147  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 385  
 Arg Asp Leu Leu Glu Thr Leu Val Leu Leu His Gly Gly Arg Ala Ala  
 1 5 10 15  
 Asp Asp Phe Gln Ala Phe Cys Pro Val Ile Val Leu Arg Arg Pro Asp  
 20 25 30  
 Ala His Ile Gly Met Thr Val Tyr Ser Phe Ala Ala Ser Val Leu Lys  
 35 40 45  
 Gln Ala Val Glu Phe Leu Ala Gly Ser Leu Asp Ser Val Ala Leu Asp  
 50 55 60  
 Gln Gly Val Glu Thr Gly Tyr Gly Asn Ala Gly Glu Tyr Gly Asp Gln  
 65 70 75 80  
 Asn Gln His His His Gln Leu Asp Gln Gly Lys Ala Gly Ala Ala Thr  
 85 90 95  
 Asn Arg Ala His Ala Val Leu His Lys Glu Lys Gly Gln Ile Ile Leu  
 100 105 110  
 Pro Ser Gly Glu Arg Ile Val Pro Val Ala Glu Thr Ala Gly Ala Glu  
 115 120 125  
 Ser Gly Met Thr Gly Lys Arg Tyr Val Lys Gln Phe Ser His Arg Leu  
 130 135 140  
 Glu His Arg  
 145

<210> 386  
 <211> 534  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 386  
 ggaaagccca tgtctcgaga aacgggtttc agcatgatcg aagtactggt tgctctgggtg 60  
 ctgatcagca ttggcgtact gggcatgggt gccatgcaag ggcgcacgat ccagtacacg 120  
 caggagtcgg tacaacgcaa tgccgcagca atgcttgcta gcgacctgat ggaaataatg 180  
 cgtgcggacc cagatgccgt actcaatcta cgcgcccaac tacgcgaaga ctcggtctac 240

tacaaggcca	agggcagcga	ctttcccgca	gccccagcgc	gctgcgcgcc	attgccagca	300
gatgctaagg	aacgtctcgg	ctgctggggc	caacaggcct	cgaaagactt	gccgggagcc	360
tccgcactct	tgaatagcca	attctacatt	tgctgcagcc	caaccccggg	tacctgcgac	420
aacaccaaag	gctcggccat	cgaaatccag	gttgctggc	gagccatgga	tggagcgtgt	480
ttcaacgcct	ctgactccac	cttgtgcacc	tacagcgtcc	gctccgaatt	gtga	534

<210> 387  
 <211> 177  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 387  
 Gly Lys Pro Met Ser Arg Glu Thr Gly Phe Ser Met Ile Glu Val Leu  
 1 5 10 15  
 Val Ala Leu Val Leu Ile Ser Ile Gly Val Leu Gly Met Val Ala Met  
 20 25 30  
 Gln Gly Arg Thr Ile Gln Tyr Thr Gln Glu Ser Val Gln Arg Asn Ala  
 35 40 45  
 Ala Ala Met Leu Ala Ser Asp Leu Met Glu Ile Met Arg Ala Asp Pro  
 50 55 60  
 Asp Ala Val Leu Asn Leu Arg Ala Gln Leu Arg Glu Asp Ser Val Tyr  
 65 70 75 80  
 Tyr Lys Ala Lys Gly Ser Asp Phe Pro Ala Ala Pro Ala Arg Cys Ala  
 85 90 95  
 Pro Leu Pro Ala Asp Ala Lys Glu Arg Leu Gly Cys Trp Ala Gln Gln  
 100 105 110  
 Ala Ser Lys Asp Leu Pro Gly Ala Ser Ala Leu Leu Asn Ser Gln Phe  
 115 120 125  
 Tyr Ile Cys Arg Ser Pro Thr Pro Gly Thr Cys Asp Asn Thr Lys Gly  
 130 135 140  
 Ser Ala Ile Glu Ile Gln Val Ala Trp Arg Ala Met Asp Gly Ala Cys  
 145 150 155 160  
 Phe Asn Ala Ser Asp Ser Thr Leu Cys Thr Tyr Ser Val Arg Ser Glu  
 165 170 175  
 Leu

<210> 388  
 <211> 330  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

agagcatgct	tgttctcaca	attcggagcg	gacgctgtag	gtgcacaagg	tggagtcaga	60
ggcgttgaaa	cacgctccat	ccatggctcg	ccaggcaacc	tggatttcga	tggccgagcc	120
tttggtgttg	tcgcaggtac	ccgggggttg	gctgcgacaa	atgtagaatt	ggctattcaa	180
gagtgcggag	gctcccggca	agtctttcga	ggcctgttgg	gcccagcagc	cgagacgttc	240
cttagcatct	gctggcaatg	gcgcgcagcg	cgctggggct	gcgggaaagt	cgctgccctt	300
ggcctttag	tagaccgagt	cttcgcgtag				330

<210> 389  
 <211> 109  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 389  
 Arg Ala Cys Leu Phe Ser Gln Phe Gly Ala Asp Ala Val Gly Ala Gln  
 1 5 10 15

Gly	Gly	Val	Arg	Gly	Val	Glu	Thr	Arg	Ser	Ile	His	Gly	Ser	Pro	Gly
		20						25				30			
Asn	Leu	Asp	Phe	Asp	Gly	Arg	Ala	Phe	Gly	Val	Val	Ala	Gly	Thr	Arg
		35					40					45			
Gly	Trp	Ala	Ala	Thr	Asn	Val	Glu	Leu	Ala	Ile	Gln	Glu	Cys	Gly	Gly
	50					55					60				
Ser	Arg	Gln	Val	Phe	Arg	Gly	Leu	Leu	Gly	Pro	Ala	Ala	Glu	Thr	Phe
65					70					75					80
Leu	Ser	Ile	Cys	Trp	Gln	Trp	Arg	Ala	Ala	Arg	Trp	Gly	Cys	Gly	Lys
			85					90					95		
Val	Ala	Ala	Leu	Gly	Leu	Val	Val	Asp	Arg	Val	Phe	Ala			
			100					105							

<210> 390  
 <211> 327  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 390	
atagccaatt ctacatttgt cgcagcccaa ccccggttac ctgcgacaac accaaaggct	60
cggccatcga aatccagggt gcctggcgag ccatggatgg agcgtgtttc aacgcctctg	120
actccacctt gtgcacctac agcgtccgct ccgaattgtg agaacaagca tgctcttcag	180
caaaatgcag aaaggcctat cgatggtaga actgctcgtg gcaactcgcta taagcagctt	240
cctgatcctg gggatcagcc agatctacat cgacaacaaa cgcaactatc tttccagca	300
aggccaggcc ggcaaccagg aaaatag	327

<210> 391  
 <211> 108  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 391	
Ile Ala Asn Ser Thr Phe Val Ala Ala Gln Pro Arg Val Pro Ala Thr	
1 5 10 15	
Thr Pro Lys Ala Arg Pro Ser Lys Ser Arg Leu Pro Gly Glu Pro Trp	
20 25 30	
Met Glu Arg Val Ser Thr Pro Leu Thr Pro Pro Cys Ala Pro Thr Ala	
35 40 45	
Ser Ala Pro Asn Cys Glu Asn Lys His Ala Leu Gln Gln Asn Ala Glu	
50 55 60	
Arg Pro Ile Asp Gly Arg Thr Ala Arg Gly Thr Arg Tyr Lys Gln Leu	
65 70 75 80	
Pro Asp Pro Gly Asp Gln Pro Asp Leu His Arg Gln Gln Thr Gln Leu	
85 90 95	
Ser Phe Pro Ala Arg Pro Gly Arg Gln Pro Gly Lys	
100 105	

<210> 392  
 <211> 864  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 392	
ctccaccttg tgcacctaca gcgtccgctc cgaattgtga gaacaagcat gctcttcagc	60
aaaatgcaga aaggcctatc gatggtagaa ctgctcgtgg cactcgctat aagcagcttc	120
ctgatcctgg ggatcagcca gatctacatc gacaacaaac gcaactatct tttccagcaa	180
ggccaggccg gcaaccagga aaatagccgc ttcgttctta tgctgctgca gcaacaactg	240

gataagacag	cctatcgtcg	ccttcacgac	gacaacatgg	agaatgcttt	caaatccgcg	300
acattcaatg	gctgtcgtgc	atttgtggct	ggcgagacta	tcgctgcggc	aactgccctc	360
aaggcgggtg	agtacgggtg	ctgcttgccg	tatcaacccg	cctacaaagg	ggagcatgat	420
tgcttcggta	atgaaattac	cggagttccg	gaaaagccct	tcacaaatac	tccccctgtc	480
gtcgttcgcc	tgggtctacct	accgagcgcc	ggtaccctga	gttgcagtcg	tcccgatata	540
gccagtcga	aatcggggaga	attggtcagt	ggtctcacag	acttccgctt	ggaagcgggg	600
gtcgggccag	cagatcgtag	cgaacgcaaa	gtatccagct	tcgtcgcaact	acaggatgtc	660
gccggtcgtc	ctatccgagc	attgcgcttc	tcaatcctgg	caggcagcga	caatacaagc	720
ctgcgcacag	gagatgatag	ccaggcacgc	gatcgctgga	tcgtccttta	tcccagagagc	780
aaaagcgcca	tcgaggccgc	agacaaaggc	cagatttacc	aaatagcgcg	tggtaaccaa	840
accatcagga	atctcatgcc	atga				864

<210> 393

<211> 287

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 393

Leu	His	Leu	Val	His	Leu	Gln	Arg	Pro	Leu	Arg	Ile	Val	Arg	Thr	Ser
1				5					10					15	
Met	Leu	Phe	Ser	Lys	Met	Gln	Lys	Gly	Leu	Ser	Met	Val	Glu	Leu	Leu
			20					25					30		
Val	Ala	Leu	Ala	Ile	Ser	Ser	Phe	Leu	Ile	Leu	Gly	Ile	Ser	Gln	Ile
			35				40					45			
Tyr	Ile	Asp	Asn	Lys	Arg	Asn	Tyr	Leu	Phe	Gln	Gln	Gly	Gln	Ala	Gly
	50					55				60					
Asn	Gln	Glu	Asn	Ser	Arg	Phe	Val	Leu	Met	Leu	Leu	Gln	Gln	Gln	Leu
65					70				75						80
Asp	Lys	Thr	Ala	Tyr	Arg	Arg	Leu	His	Asp	Asn	Met	Glu	Asn	Ala	
				85				90					95		
Phe	Lys	Ser	Ala	Thr	Phe	Asn	Gly	Cys	Arg	Ala	Phe	Val	Ala	Gly	Glu
			100					105					110		
Thr	Ile	Ala	Ala	Ala	Thr	Ala	Leu	Lys	Ala	Gly	Glu	Tyr	Gly	Val	Cys
			115				120					125			
Leu	Arg	Tyr	Gln	Pro	Ala	Tyr	Lys	Gly	Glu	His	Asp	Cys	Leu	Gly	Asn
	130					135					140				
Glu	Ile	Thr	Gly	Val	Pro	Glu	Lys	Pro	Phe	Thr	Asn	Thr	Pro	Pro	Val
145					150					155					160
Val	Val	Arg	Leu	Val	Tyr	Leu	Pro	Ser	Ala	Gly	Thr	Leu	Ser	Cys	Ser
				165					170					175	
Arg	Pro	Asp	Ile	Ala	Gln	Ser	Lys	Ser	Gly	Glu	Leu	Val	Ser	Gly	Leu
			180					185					190		
Thr	Asp	Phe	Arg	Leu	Glu	Ala	Gly	Val	Gly	Pro	Ala	Asp	Arg	Ser	Glu
	195						200					205			
Arg	Lys	Val	Ser	Ser	Phe	Val	Ala	Leu	Gln	Asp	Val	Ala	Gly	Arg	Pro
	210					215					220				
Ile	Arg	Ala	Leu	Arg	Phe	Ser	Ile	Leu	Ala	Gly	Ser	Asp	Asn	Thr	Ser
225					230					235					240
Leu	Arg	Thr	Gly	Asp	Asp	Ser	Gln	Ala	Arg	Asp	Arg	Trp	Ile	Val	Leu
				245					250					255	
Tyr	Pro	Glu	Ser	Lys	Ser	Ala	Ile	Glu	Ala	Ala	Asp	Lys	Gly	Gln	Ile
			260					265					270		
Tyr	Gln	Ile	Ala	Arg	Gly	Asn	Gln	Thr	Ile	Arg	Asn	Leu	Met	Pro	
	275						280					285			

<210> 394

<211> 423

<212> DNA

<213> Pseudomonas aeruginosa

```
<400> 394
gtagaccagg cgaacgacga caggggggagt atttgtgaag ggcttttccg gaactccggt      60
aatttcatta ccgaggcaat catgctcccc tttgtaggcg gggttgatagc gcaagcagac      120
accgtactca cccgccttga gggcagttgc cgcagcgata gtctcgccag ccacaaatgc      180
acgacagcca ttgaatgtcg cggatttgaa agcattctcc atgttgctcg cgtgaaggcg      240
acgataggct gtcttatcca gttgttgctg cagcagcata agaacgaagc ggctattttc      300
ctggttgccg gcctggcctt gctggaaaag atagtgtcgt ttgttgctga tgtagatctg      360
gctgatcccc aggatcagga agctgcttat agcgagtgcc acgagcagtt ctaccatcga      420
tag                                                                    423
```

<210> 395

<211> 140

<212> PRT

<213> Pseudomonas aeruginosa

```
<400> 395
Val Asp Gln Ala Asn Asp Asp Arg Gly Ser Ile Cys Glu Gly Leu Phe
 1          5          10          15
Arg Asn Ser Gly Asn Phe Ile Thr Glu Ala Ile Met Leu Pro Phe Val
 20          25          30
Gly Gly Leu Ile Ala Gln Ala Asp Thr Val Leu Thr Arg Leu Glu Gly
 35          40          45
Ser Cys Arg Ser Asp Ser Leu Ala Ser His Lys Cys Thr Thr Ala Ile
 50          55          60
Glu Cys Arg Gly Phe Glu Ser Ile Leu His Val Val Val Val Lys Ala
 65          70          75          80
Thr Ile Gly Cys Leu Ile Gln Leu Leu Leu Gln Gln His Lys Asn Glu
 85          90          95
Ala Ala Ile Phe Leu Val Ala Gly Leu Ala Leu Leu Glu Lys Ile Val
100          105          110
Ala Phe Val Val Asp Val Asp Leu Ala Asp Pro Gln Asp Gln Glu Ala
115          120          125
Ala Tyr Ser Glu Cys His Glu Gln Phe Tyr His Arg
130          135          140
```

<210> 396

<211> 396

<212> DNA

<213> Pseudomonas aeruginosa

```
<400> 396
tcctggggat cagccagatc tacatcgaca acaaacgcaa ctatcttttc cagcaaggcc      60
aggccggcaa ccaggaaaat agccgcttcg ttcttatgct gctgcagcaa caactggata      120
agacagccta tcgtcgccct cagcagcaca acatggagaa tgctttcaaa tccgcgacat      180
tcaatggctg tcgtgcattt gtggctggcg agactatcgc tgcggcaact gccctcaagg      240
cgggtgagta cgggtgtctg ttgcgctatc aaccgccta caaaggggag catgattgcc      300
tcggtaatga aattaccgga gttccggaaa agcccttcac aaatactccc cctgtcgtcg      360
ttcgctggt ctacctaccg agcgccggta ccctga                                396
```

<210> 397

<211> 131

<212> PRT

<213> Pseudomonas aeruginosa

```
<400> 397
Ser Trp Gly Ser Ala Arg Ser Thr Ser Thr Thr Asn Ala Thr Ile Phe
```

1	5	10	15
Ser Ser Lys	Ala Arg Pro Ala Thr	Arg Lys Ile Ala Ala	Ser Phe Leu
20	25	30	
Cys Cys Cys	Ser Asn Asn Trp	Ile Arg Gln Pro Ile Val	Ala Phe Thr
35	40	45	
Thr Thr Thr	Trp Arg Met Leu	Ser Asn Pro Arg His	Ser Met Ala Val
50	55	60	
Val His Leu	Trp Leu Ala Arg Leu	Ser Leu Arg Gln Leu	Pro Ser Arg
65	70	75	80
Arg Val Ser	Thr Val Ser Ala Cys	Ala Ile Asn Pro Pro	Thr Lys Gly
85	90	95	
Ser Met Ile	Ala Ser Val Met Lys	Leu Pro Glu Phe Arg	Lys Ser Pro
100	105	110	
Ser Gln Ile	Leu Pro Leu Ser Ser	Phe Ala Trp Ser Thr	Tyr Arg Ala
115	120	125	
Pro Val Pro			
130			

<210> 398  
 <211> 306  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 398	
gttcgagtcg tcccgatatc gccagtcga aatcgggaga attggtcagt ggtctcacag	60
acttcgcgtt ggaagcgggg gtcgggccag cagatcgtag cgaacgcaaa gtatccagct	120
tcgtcgact acaggatgtc gccggtcgtc ctatccgagc attgcgcttc tcaatcctgg	180
caggcagcga caatacaagc ctgcgcacag gagatgatag ccaggcacgc gatcgctgga	240
tcgtccttta tcccgaagc aaaagcgcca tcgaggccgc agacaaaggc cagatttacc	300
aatag	306

<210> 399  
 <211> 101  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 399	
Val Ala Val Val Pro Ile Ser Pro Ser Arg Asn Arg Glu Asn Trp Ser	
1	15
Val Val Ser Gln Thr Ser Ala Trp Lys Arg Gly Ser Gly Gln Gln Ile	
20	30
Val Ala Asn Ala Lys Tyr Pro Ala Ser Ser His Tyr Arg Met Ser Pro	
35	45
Val Val Leu Ser Glu His Cys Ala Ser Gln Ser Trp Gln Ala Ala Thr	
50	60
Ile Gln Ala Cys Ala Gln Glu Met Ile Ala Arg His Ala Ile Ala Gly	
65	80
Ser Ser Phe Ile Pro Arg Ala Lys Ala Pro Ser Arg Pro Gln Thr Lys	
85	95
Ala Arg Phe Thr Lys	
100	

<210> 400  
 <211> 630  
 <212> DNA  
 <213> Pseudomonas aeruginosa

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<400> 400
ccaaaccatc aggaatctca tgccatgacc ctgcgccata cctctcgaca gcagggatcc      60
acgttggtga tctcgtggt tatcttggtg atgatcacgc tcctcgccgt ttccaacatg      120
cgcgaggtgt cactggaaaag ccgtatcacc ggcaatctca tcgaacagaa gcgcctgcgc      180
aatgcgggcg aagctgggct acgcgaaggt gaacgacgct ttttcaatac catcaagccc      240
ccagaggtcg gcagcggatg cgccgatagc aatgtcaaac ggccttgcat actgaacctg      300
agtgccctct ccgtaccccg agatgacgtg cacaacaatc cgttggcagc cctgaacggc      360
aagacagata acgccaattc acgtgtcttg atgccctacc gaggcagcga tctgaataac      420
cctacgcaga tcgacaaaga ccgcgcagtc acctggcaga ccatcacggt gcccgtggtg      480
gaacagaaca acgaagcgga aaatcccagag tacggcaaca tgatgcgcgg ggtcggcacg      540
tttactactg aaaccaacag ccgcgccctc aacaaggcgg gcggagagac tggtctacag      600
gccgttcagt cacgcctgta taccaactga                                     630

```

```

<210> 401
<211> 209
<212> PRT
<213> Pseudomonas aeruginosa

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<400> 401
Pro Asn His Gln Glu Ser His Ala Met Thr Leu Arg His Thr Ser Arg
 1          5          10          15
Gln Gln Gly Ser Thr Leu Leu Ile Ser Leu Val Ile Leu Leu Met Ile
 20          25          30
Thr Leu Leu Ala Val Ser Asn Met Arg Glu Val Ser Leu Glu Ser Arg
 35          40          45
Ile Thr Gly Asn Leu Ile Glu Gln Lys Arg Leu Arg Asn Ala Gly Glu
 50          55          60
Ala Gly Leu Arg Glu Gly Glu Arg Arg Phe Phe Asn Thr Ile Lys Pro
 65          70          75          80
Pro Glu Val Gly Ser Gly Cys Ala Asp Ser Asn Val Lys Arg Pro Cys
 85          90          95
Ile Leu Asn Leu Ser Ala Leu Ser Val Pro Arg Asp Asp Val His Asn
100          105          110
Asn Pro Val Ala Ala Leu Asn Gly Lys Thr Asp Asn Ala Asn Ser Arg
115          120          125
Val Trp Met Pro Tyr Arg Gly Ser Asp Leu Asn Asn Pro Thr Gln Ile
130          135          140
Asp Lys Asp Arg Ala Val Thr Trp Gln Thr Ile Thr Val Pro Ala Gly
145          150          155          160
Glu Gln Asn Asn Glu Ala Glu Asn Pro Glu Tyr Gly Asn Met Met Arg
165          170          175
Gly Val Gly Thr Phe Tyr Tyr Glu Thr Asn Ser Arg Ala Leu Asn Lys
180          185          190
Ala Gly Gly Glu Thr Val Leu Gln Ala Val His Ala Arg Leu Tyr Thr
195          200          205
Asn

```

```

<210> 402
<211> 378
<212> DNA
<213> Pseudomonas aeruginosa

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<400> 402
ggcatccaga cacgtgaatt ggcgttatct gtcttgccgt tcagggctgc caccggattg      60
ttgtgcacgt catctcgggg tacggagagg gcactcaggt tcagtatgca aggccgtttg      120
acattgctat cggcgcatcc gctgccgacc tctgggggct tgatggtatt gaaaaagcgt      180
cgttcacctt cgcgtagccc agcttcgccc gcattgcgca ggcgcttctg ttcgatgaga      240

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ttgccggtga	tacggctttc	cagtgacacc	tcgcgcatgt	tggaaacggc	gaggagcgtg	300
atcatcaaca	agataaccag	cgagatcaac	aacgtggatc	cctgctgtcg	agaggtatgg	360
cgcagggtca	tggcatga					378

<210> 403  
 <211> 125  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 403

Gly	Ile	Gln	Thr	Arg	Glu	Leu	Ala	Leu	Ser	Val	Leu	Pro	Phe	Arg	Ala
1				5					10					15	
Ala	Thr	Gly	Leu	Cys	Thr	Ser	Ser	Arg	Gly	Thr	Glu	Arg	Ala	Leu	
		20					25					30			
Arg	Phe	Ser	Met	Gln	Gly	Arg	Leu	Thr	Leu	Leu	Ser	Ala	His	Pro	Leu
		35					40					45			
Pro	Thr	Ser	Gly	Gly	Leu	Met	Val	Leu	Lys	Lys	Arg	Arg	Ser	Pro	Ser
		50				55					60				
Arg	Ser	Pro	Ala	Ser	Pro	Ala	Leu	Arg	Arg	Arg	Phe	Cys	Ser	Met	Arg
65				70					75					80	
Leu	Pro	Val	Ile	Arg	Leu	Ser	Ser	Asp	Thr	Ser	Arg	Met	Leu	Glu	Thr
			85						90					95	
Ala	Arg	Ser	Val	Ile	Ile	Asn	Lys	Ile	Thr	Ser	Glu	Ile	Asn	Asn	Val
			100					105					110		
Asp	Pro	Cys	Cys	Arg	Glu	Val	Trp	Arg	Arg	Val	Met	Ala			
		115					120					125			

<210> 404  
 <211> 3597  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 404

tgcgcggggt	cggcacggtc	tactacgaaa	ccaacagccg	cgccctcaac	aaggcgggcg	60
gagagactgt	tctacaggcc	gttcatgcac	gcctgtatac	caactgactg	gagccagcgc	120
atgatccacc	agattacccg	cgcaggaaaa	agcctgctgg	ctgcagggtg	caccctgagc	180
atcctgttcg	cctctgacag	ttatgccgcc	acggccctga	atgtcagcca	gcaacccctg	240
ttcctaacc	agggcggtgc	tcccaacctg	ctgttcactc	tagatgactc	aggcagtatg	300
gcctgggctt	acgtgcccga	cggtattagc	gggaatagcg	gcagagcggg	acgttccagc	360
gattacaacg	cactgtacta	caaccccgat	tatgcttacc	aagtgcctaa	gaaattgaca	420
ctgtcaggcg	atcagatcat	cgtttccgac	tatccagtgc	cacgcttcac	agcagcctgg	480
caggatggct	acgcccgaag	ctccaccacc	aacctgagca	ataactatcg	ccctcaatgg	540
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acttataagg	taagcgctag	ctgccctgca	cagccggtga	gcagctccaa	ctcctgttat	660
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cgcaaccgca	tcctggccac	aaagaccgct	gccaacctgg	cctttttacag	cctgccggaa	780
aacgtgcgtc	tcacttgggg	ggccctgaac	acctgtagca	tcggcgccaa	cagcagaagc	840
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ctggcggaaca	gcccggccag	cggcggtact	cctctgcatg	cggctcttga	ccgagccgga	960
cgcttcttgc	aaaccaacgg	cacagcttat	accaccgaag	acggaaaagac	atattcctgc	1020
cggggcagct	atcacatcat	gatgaccgac	ggtatctgga	acggtcggaa	cgtcaccccc	1080
ggcaatctcg	acaaccagaa	ccagaccctt	cctgatagca	ccctctatag	gccacagccc	1140
ccttatgccg	acagcaatgc	cagctcattg	gctgacctgg	ctttcaaata	ctggaccaca	1200
gacttacgtc	ccagcatcga	caatgacctg	aagcctttca	tggcctacaa	gagtggggac	1260
gattccaagg	attactggga	ccctcgcaac	aaccagccca	cttggcaaca	catggtcaac	1320
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gataacgacg	ccgcacccgg	taacgtctac	gacctctggc	atgcagctat	caactctcgt	1500

ggagacttct	ttagcgcgga	atcaccggac	tctctgggtc	aggctttcaa	taagatcctg	1560
acacggattt	ccgagcgcaa	cacctcctcc	tccaaaccag	caatgacttc	cgcgctgcag	1620
gatgacggaa	ccggcgacaa	gctgatccgc	tacagctacc	agtccagctt	tgccagtgcg	1680
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aaaaccagg	aatggagcgc	cggcgcactg	ctggacaacc	gagctcccg	taccgtaat	1800
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caacgacagg	cgggtgttagg	ggacatcgtg	cactcgtctc	cagccgtggg	cggaccggcc	2040
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gcccacaacca	tgacaacaga	ggcgaactcc	acattcggta	gcgtgaacag	gaatattcgg	3120
cttattagcc	aaaaccgggt	gaagtggtag	aaagacggag	caaccggtag	cgcgaaactcg	3180
gatgtggcta	gctatggctg	gcgactgaat	ctggaggtca	atagcagcaa	gaaaggcgaa	3240
atgatgatcg	aagatatggt	cgctgccggc	caagtgtctc	tattgcagac	cttgacaccg	3300
aacgacgacc	cttgtgacag	cggctctacc	agctggacct	acggcctcaa	tccatatact	3360
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tcggattaca	acggctcggg	cgtatccggc	ttccaacagg	atggactagg	tggcttggcc	3480
attaccaga	acgaacagcg	tcaatccgag	gcttgactg	gtgatgagtg	catcatcttc	3540
aacccagcg	acaagagtaa	cggacgacaa	acctggcggg	tcgtcgagga	gaaatga	3597

<210> 405

<211> 1198

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 405

Cys	Ala	Gly	Ser	Ala	Arg	Ser	Thr	Thr	Lys	Pro	Thr	Ala	Ala	Pro	Ser
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Thr	Arg	Arg	Ala	Glu	Arg	Leu	Phe	Tyr	Arg	Pro	Phe	Met	His	Ala	Cys
			20					25					30		
Ile	Pro	Thr	Asp	Trp	Ser	Gln	Arg	Met	Ile	His	Gln	Ile	Thr	Arg	Ala
		35				40					45				
Gly	Lys	Ser	Leu	Leu	Ala	Ala	Gly	Cys	Thr	Leu	Ser	Ile	Leu	Phe	Ala
	50				55						60				
Ser	Asp	Ser	Tyr	Ala	Ala	Thr	Ala	Leu	Asn	Val	Ser	Gln	Gln	Pro	Leu
	65			70					75					80	
Phe	Leu	Thr	Gln	Gly	Val	Ala	Pro	Asn	Leu	Leu	Phe	Thr	Leu	Asp	Asp
			85					90					95		
Ser	Gly	Ser	Met	Ala	Trp	Ala	Tyr	Val	Pro	Asp	Gly	Ile	Ser	Gly	Asn
		100				105					110				
Ser	Gly	Arg	Ala	Gly	Arg	Ser	Ser	Asp	Tyr	Asn	Ala	Leu	Tyr	Tyr	Asn
	115					120					125				
Pro	Asp	Tyr	Ala	Tyr	Gln	Val	Pro	Lys	Lys	Leu	Thr	Leu	Ser	Gly	Asp

130		135		140
Gln Ile Ile Val Ser Asp Tyr Pro Val Pro Arg Phe Thr Ala Ala Trp				
145		150		155
Gln Asp Gly Tyr Ala Gln Gly Ser Thr Thr Asn Leu Ser Asn Asn Tyr				
	165		170	
Arg Pro Gln Trp Gly Thr Gly Trp Leu Gly Cys Ile Asp Ser Ser Cys				
	180		185	
Asn Thr Gly Arg Ala Tyr Tyr Tyr Thr Tyr Lys Val Ser Ala Ser Cys				
	195		200	
Pro Ala Gln Pro Val Ser Ser Ser Asn Ser Cys Tyr Thr Tyr Asn Ala				
	210		215	
Leu Pro Thr Ser Gln Glu Ser Asn Phe Ala Ile Trp Tyr Ser Tyr Tyr				
225		230		235
Arg Asn Arg Ile Leu Ala Thr Lys Thr Ala Ala Asn Leu Ala Phe Tyr				
	245		250	
Ser Leu Pro Glu Asn Val Arg Leu Thr Trp Gly Ala Leu Asn Thr Cys				
	260		265	
Ser Ile Gly Ala Asn Ser Arg Ser Cys Gln Asn Asn Ala Leu Leu Gln				
	275		280	
Phe Asn Lys Gln His Lys Ile Asn Phe Phe Asn Trp Leu Ala Asn Ser				
290		295		300
Pro Ala Ser Gly Gly Thr Pro Leu His Ala Ala Leu Asp Arg Ala Gly				
305		310		315
Arg Phe Leu Gln Thr Asn Gly Thr Ala Tyr Thr Thr Glu Asp Gly Lys				
	325		330	
Thr Tyr Ser Cys Arg Ala Ser Tyr His Ile Met Met Thr Asp Gly Ile				
	340		345	
Trp Asn Gly Arg Asn Val Thr Pro Gly Asn Leu Asp Asn Gln Asn Gln				
	355		360	
Thr Phe Pro Asp Ser Thr Leu Tyr Arg Pro Gln Pro Pro Tyr Ala Asp				
	370		375	
Ser Asn Ala Ser Ser Leu Ala Asp Leu Ala Phe Lys Tyr Trp Thr Thr				
385		390		395
Asp Leu Arg Pro Ser Ile Asp Asn Asp Leu Lys Pro Phe Met Ala Tyr				
	405		410	
Lys Ser Gly Asp Asp Ser Lys Asp Tyr Trp Asp Pro Arg Asn Asn Pro				
	420		425	
Ala Thr Trp Gln His Met Val Asn Phe Thr Val Gly Leu Gly Leu Ser				
	435		440	
Tyr Ser Leu Thr Leu Asn Ser Ala Pro Thr Trp Thr Gly Ser Thr Phe				
	450		455	
Gly Asn Tyr Glu Glu Leu Met Ala Gly Ser Lys Ala Trp Pro Ser Val				
465		470		475
Asp Asn Asp Ala Ala Pro Gly Asn Val Tyr Asp Leu Trp His Ala Ala				
	485		490	
Ile Asn Ser Arg Gly Asp Phe Phe Ser Ala Glu Ser Pro Asp Ser Leu				
	500		505	
Val Gln Ala Phe Asn Lys Ile Leu Thr Arg Ile Ser Glu Arg Asn Thr				
	515		520	
Ser Ser Ser Lys Pro Ala Met Thr Ser Ala Leu Gln Asp Asp Gly Thr				
	530		535	
Gly Asp Lys Leu Ile Arg Tyr Ser Tyr Gln Ser Ser Phe Ala Ser Asp				
545		550		555
Lys Asn Trp Ala Gly Asp Leu Ile Arg Tyr Lys Val Glu Ser Thr Ser				
	565		570	
Thr Gly Ser Thr Lys Thr Gln Glu Trp Ser Ala Gly Ala Leu Leu Asp				
	580		585	
Asn Arg Ala Pro Ala Thr Arg Asn Ile Tyr Ile Ala Ser Asn Ser Gly				
	595		600	
			605	

Thr	Asn	Arg	Leu	Lys	Pro	Phe	Thr	Trp	Ser	Asn	Ile	Glu	Gly	Ser	Gln
610						615					620				
Leu	Ala	Thr	Trp	Leu	Asn	Arg	Asn	Pro	Asp	Lys	Asp	Asn	Gln	Ala	Asp
625					630					635					640
Thr	Lys	Gly	Ala	Gln	Arg	Val	Asp	Phe	Ile	Arg	Gly	Gln	Gln	Asn	Met
				645					650					655	
Asp	Gly	Phe	Arg	Gln	Arg	Gln	Ala	Val	Leu	Gly	Asp	Ile	Val	His	Ser
			660					665					670		
Ser	Pro	Ala	Val	Val	Gly	Pro	Ala	Gln	Tyr	Leu	Thr	Tyr	Leu	Ala	Asn
		675					680					685			
Pro	Ile	Glu	Pro	Ser	Gly	Asp	Tyr	Gly	Thr	Phe	Lys	Thr	Glu	Ala	Asp
	690					695					700				
Gln	Arg	Ser	Pro	Arg	Val	Tyr	Val	Gly	Ser	Asn	Asp	Gly	Met	Leu	His
705					710					715					720
Gly	Phe	Asn	Ile	Lys	Thr	Gly	Val	Glu	Glu	Phe	Ala	Phe	Ile	Pro	Thr
				725					730					735	
Ala	Val	Phe	Glu	Lys	Leu	Asn	Lys	Leu	Thr	Gly	Ile	Ser	Tyr	Gln	Gly
			740					745					750		
Gly	Ala	His	Gln	Tyr	Phe	Val	Asp	Ala	Thr	Pro	Val	Val	Ser	Asp	Ala
		755					760					765			
Phe	Phe	Asp	Gly	Ala	Trp	His	Thr	Val	Leu	Ile	Gly	Thr	Leu	Gly	Ala
	770					775					780				
Gly	Gly	Arg	Gly	Leu	Phe	Ala	Leu	Asp	Val	Thr	Lys	Pro	Asp	Asp	Val
785					790					795					800
Lys	Leu	Leu	Trp	Glu	Tyr	Asp	Ser	Ser	Thr	Asp	Ser	Asp	Leu	Gly	Tyr
				805					810					815	
Thr	Phe	Ser	Lys	Pro	Thr	Val	Ala	Arg	Leu	His	Ser	Gly	Gln	Trp	Ala
			820					825					830		
Val	Val	Thr	Gly	Asn	Gly	Tyr	Gly	Ser	Asp	Asn	Asp	Lys	Ala	Ala	Leu
		835					840					845			
Leu	Leu	Ile	Asp	Leu	Lys	Lys	Gly	Thr	Leu	Ile	Lys	Lys	Leu	Glu	Val
	850					855					860				
Gln	Ser	Glu	Arg	Gly	Ile	Ala	Asn	Gly	Leu	Ser	Thr	Pro	Arg	Leu	Ala
865					870					875					880
Asp	Asn	Asn	Ser	Asp	Gly	Ile	Ala	Asp	Tyr	Ala	Tyr	Ala	Gly	Asp	Leu
				885					890					895	
Gln	Gly	Asn	Ile	Trp	Arg	Phe	Asp	Leu	Ile	Gly	Asn	Thr	Arg	Asn	Asp
			900					905					910		
Asp	Pro	Asp	Thr	Asn	Thr	Ser	Ile	Asn	Pro	Phe	Lys	Pro	Gly	Asp	Val
		915					920					925			
Asp	Pro	Ser	Ala	Phe	Arg	Val	Ser	Phe	Ser	Gly	Ala	Pro	Leu	Phe	Arg
		930				935					940				
Ala	Arg	Ala	Asp	Asn	Asn	Thr	Arg	Gln	Pro	Ile	Thr	Ala	Pro	Pro	Thr
945						950				955					960
Leu	Val	Arg	His	Pro	Ser	Arg	Lys	Gly	Tyr	Ile	Val	Ile	Val	Gly	Thr
			965						970					975	
Gly	Lys	Tyr	Phe	Glu	Asp	Asp	Asp	Ala	Gln	Ala	Asp	Thr	Ser	Arg	Ala
			980					985					990		
Met	Thr	Leu	Tyr	Gly	Ile	Trp	Asp	Arg	Gln	Thr	Lys	Gly	Glu	Ser	Ala
		995					1000					1005			
Asn	Ser	Thr	Pro	Thr	Ile	Asp	Arg	Asn	Ala	Leu	Thr	Ala	Gln	Thr	Met
	1010					1015						1020			
Thr	Thr	Glu	Ala	Asn	Ser	Thr	Phe	Gly	Ser	Val	Asn	Arg	Asn	Ile	Arg
1025						1030					1035				104
Leu	Ile	Ser	Gln	Asn	Pro	Val	Lys	Trp	Tyr	Lys	Asp	Gly	Ala	Thr	Gly
				1045					1050					1055	
Thr	Ala	Asn	Ser	Asp	Val	Ala	Ser	Tyr	Gly	Trp	Arg	Leu	Asn	Leu	Glu
			1060					1065					1070		
Val	Asn	Ser	Ser	Lys	Lys	Gly	Glu	Met	Met	Ile	Glu	Asp	Met	Phe	Ala

1075	1080	1085
Ala Gly Gln Val Leu Leu Leu Gln Thr Leu Thr	Pro Asn Asp Asp Pro	
1090	1095	1100
Cys Asp Ser Gly Ser Thr Ser Trp Thr Tyr Gly Leu Asn Pro Tyr Thr		
1105	1110	1115
Gly Gly Arg Thr Ser Phe Thr Val Phe Asp Leu Lys Arg Ala Gly Ile		
1125	1130	1135
Val Asp Ser Gly Ser Asp Tyr Asn Gly Ser Val Val Ser Ala Phe Gln		
1140	1145	1150
Gln Asp Gly Leu Gly Gly Leu Ala Ile Thr Gln Asn Glu Gln Arg Gln		
1155	1160	1165
Ser Glu Ala Cys Thr Gly Asp Glu Cys Ile Ile Phe Asn Pro Ser Asp		
1170	1175	1180
Lys Ser Asn Gly Arg Gln Thr Trp Arg Val Val Glu Glu Lys		
1185	1190	1195

<210> 406  
 <211> 741  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 406	
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catcatgatg tgatagctgg cccggcagga atatgtcttt ccgtcttcgg tggataaagc	180
tgtgccgttg gtttgcaaga agcgtccggc tccgtcaaga gccgcatgca gaggagtacc	240
gccgtggcc gggctgttcg ccagccaatt gaagaaattg attttgtgct gcttggtgaa	300
ttggagcagg gcattgtttt ggcagcttct gctgttggcg ccgatgctac aggtgttcag	360
ggcccccaa gtgagacgca cgttttccgg caggctgtaa aaggccagggt tggcagcggg	420
ctttgtggcc aggatgcggg tgcgatagta ggagtaccat atcgcaaagt tgctttcctg	480
actggtagga agagcattgt aggtataaca ggagttggag ctgctcaccg gctgtgcagg	540
gcagctagcg cttaccttat aagtatagta ataagctctc ccggtattgc agctgctatc	600
gatgcaacca agccagccgg ttccccattg agggcgatag ttattgctca ggttggtggg	660
ggagccttgg gcgtagccat cctgccaggc tgctgtgaag cgtggcactg gatagtcgga	720
aacgatgatc tgatcgctg a	741

<210> 407  
 <211> 246  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 407	
Ala Gly Ile Ala Val Gly Ile Arg Gly Leu Trp Pro Ile Glu Gly Ala	
1 5 10 15	
Ile Arg Lys Gly Leu Val Leu Val Val Glu Ile Ala Gly Gly Asp Val	
20 25 30	
Pro Thr Val Pro Asp Thr Val Gly His His Asp Val Ile Ala Gly Pro	
35 40 45	
Ala Gly Ile Cys Leu Ser Val Phe Gly Gly Ile Ser Cys Ala Val Gly	
50 55 60	
Leu Gln Glu Ala Ser Gly Ser Val Lys Ser Arg Met Gln Arg Ser Thr	
65 70 75 80	
Ala Ala Gly Arg Ala Val Arg Gln Pro Ile Glu Glu Ile Asp Phe Val	
85 90 95	
Leu Leu Val Glu Leu Glu Gln Gly Ile Val Leu Ala Ala Ser Ala Val	
100 105 110	
Gly Ala Asp Ala Thr Gly Val Gln Gly Pro Pro Ser Glu Thr His Val	
115 120 125	

Phe	Arg	Gln	Ala	Val	Lys	Gly	Gln	Val	Gly	Ser	Gly	Leu	Cys	Gly	Gln
130						135					140				
Asp	Ala	Val	Ala	Ile	Val	Gly	Val	Pro	Tyr	Arg	Lys	Val	Ala	Phe	Leu
145					150					155					160
Thr	Gly	Arg	Lys	Ser	Ile	Val	Gly	Ile	Thr	Gly	Val	Gly	Ala	Ala	His
				165					170					175	
Arg	Leu	Cys	Arg	Ala	Ala	Ser	Ala	Tyr	Leu	Ile	Ser	Ile	Val	Ile	Ser
			180					185					190		
Ser	Pro	Gly	Ile	Ala	Ala	Ala	Ile	Asp	Ala	Thr	Lys	Pro	Ala	Gly	Ser
		195					200					205			
Pro	Leu	Arg	Ala	Ile	Val	Ile	Ala	Gln	Val	Gly	Gly	Gly	Ala	Leu	Gly
	210					215					220				
Val	Ala	Ile	Leu	Pro	Gly	Cys	Cys	Glu	Ala	Trp	His	Trp	Ile	Val	Gly
225					230					235					240
Asn	Asp	Asp	Leu	Ile	Ala										
				245											

<210> 408  
 <211> 351  
 <212> DNA  
 <213> Pseudomonas aeruginosa

ctgacttccc	tcaatattgc	tccatgtgaa	aggcttaagg	cggttgggttc	cgctattgct	60
ggcgatgtaa	atattacggg	tagcgggagc	tcggttgccc	agcagtgcgc	cggcgctcca	120
ttcctggggtt	ttggtcgaac	cggtggaagt	cgactccacc	ttgtaacgta	taaggtcgcc	180
cgcccagttc	ttgtcactgg	caaagctgga	ctggtagctg	tagcggatca	gcttgctgcc	240
ggttccgtca	tcctgcagcg	cggaagtcac	tgctggtttg	gaggaggagg	tggtgcgctc	300
ggaaatccgt	gtcaggatct	tattgaaagc	ctgaaccaga	gagtccgggtg	a	351

<210> 409  
 <211> 116  
 <212> PRT  
 <213> Pseudomonas aeruginosa

Leu	Thr	Ser	Leu	Asn	Ile	Ala	Pro	Cys	Glu	Arg	Leu	Lys	Ala	Val	Gly
1				5					10					15	
Ser	Ala	Ile	Ala	Gly	Asp	Val	Asn	Ile	Thr	Gly	Ser	Gly	Ser	Ser	Val
			20				25					30			
Val	Gln	Gln	Cys	Ala	Gly	Ala	Pro	Phe	Leu	Gly	Phe	Gly	Arg	Thr	Gly
	35					40					45				
Gly	Ser	Arg	Leu	His	Leu	Val	Thr	Tyr	Lys	Val	Ala	Arg	Pro	Val	Leu
	50				55					60					
Val	Thr	Gly	Lys	Ala	Gly	Leu	Val	Ala	Val	Ala	Asp	Gln	Leu	Val	Ala
65					70				75						80
Gly	Ser	Val	Ile	Leu	Gln	Arg	Gly	Ser	His	Cys	Trp	Phe	Gly	Gly	Gly
			85					90					95		
Gly	Val	Ala	Leu	Gly	Asn	Pro	Cys	Gln	Asp	Leu	Ile	Glu	Ser	Leu	Asn
		100						105					110		
Gln	Arg	Val	Arg												
			115												

<210> 410  
 <211> 546  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 410  
agctgccttg tcattatcgc ttccatagcc gttgccggta actactgccc attgtccgct 60  
gtgcagtctg gctacggtag gtttgagaaa ggtgtaacca aggtccgagt cggtagctgct 120  
atcgtattcc caaagcagct tgacatcgtc cggcttggtt acatcgagtg cgaacaggcc 180  
gcgacctcca gcaccaagcg ttccgatcag aacagtgtgc caagctccat cgaaaaaggc 240  
atcgctgacg accggtgtag cgtcgacgaa atattgggtg gcaccgccct ggtagctgat 300  
gccggtaaagc ttgttaagct tttcgaatac tgctgtaggg atgaaagcga actcttccac 360  
gccggttttg atgttgaaac catgcaacat gccatcgttg gatccaacat aaactctagg 420  
gctgcgctgg tctgcctctg tcttgaatgt gccgtagtcg ccgctggggt cgatgggggt 480  
ggccagataa gtgaggtatt gggccgggtc gaccacggct ggagacgagt gcacgatgtc 540  
ccctaa 546

<210> 411  
<211> 181  
<212> PRT  
<213> *Pseudomonas aeruginosa*

<400> 411  
Ser Cys Leu Val Ile Ile Ala Ser Ile Ala Val Ala Gly Asn Tyr Cys  
1 5 10 15  
Pro Leu Ser Ala Val Gln Ser Gly Tyr Gly Arg Phe Gly Glu Gly Val  
20 25 30  
Thr Lys Val Arg Val Gly Thr Ala Ile Val Phe Pro Lys Gln Leu Asp  
35 40 45  
Ile Val Arg Leu Gly Tyr Ile Glu Cys Glu Gln Ala Ala Thr Ser Ser  
50 55 60  
Thr Lys Arg Ser Asp Gln Asn Ser Val Pro Ser Ser Ile Glu Lys Gly  
65 70 75 80  
Ile Ala Asp Asp Arg Cys Ser Val Asp Glu Ile Leu Val Gly Thr Ala  
85 90 95  
Leu Val Ala Asp Ala Gly Lys Leu Val Lys Leu Phe Glu Tyr Cys Cys  
100 105 110  
Arg Asp Glu Ser Glu Leu Phe His Ala Gly Phe Asp Val Glu Thr Met  
115 120 125  
Gln His Ala Ile Val Gly Ser Asn Ile Asn Ser Arg Ala Ala Leu Val  
130 135 140  
Cys Leu Cys Leu Glu Cys Ala Val Val Ala Ala Gly Phe Asp Gly Val  
145 150 155 160  
Gly Gln Ile Ser Glu Val Leu Gly Arg Ser Asp His Gly Trp Arg Arg  
165 170 175  
Val His Asp Val Pro  
180

<210> 412  
<211> 336  
<212> DNA  
<213> *Pseudomonas aeruginosa*

<400> 412  
gggacatcgt gcactcgtct ccagccgtgg tcggaccggc ccaatacctc acttatctgg 60  
ccaaccccat cgaaccagc ggcgactacg gcacattcaa gacagaggca gaccagcgca 120  
gccctagagt ttatgttgga tccaacgatg gcattgtgca tggtttcaac atcaaaaccg 180  
gcgtggaaga gttcgctttc atccctacag cagtattcga aaagcttaac aagcttaccg 240  
gcatcagcta ccagggcggt gccaccaat atttcgtcga cgctacaccg gtcgtcagcg 300  
atgccttttt cgatggagct tggcacactg ttctga 336

<210> 413  
<211> 111

<212> PRT  
 <213> Pseudomonas aeruginosa

<400> 413  
 Gly Thr Ser Cys Thr Arg Leu Gln Pro Trp Ser Asp Arg Pro Asn Thr  
 1 5 10 15  
 Ser Leu Ile Trp Pro Thr Pro Ser Asn Pro Ala Ala Thr Thr Ala His  
 20 25 30  
 Ser Arg Gln Arg Gln Thr Ser Ala Ala Leu Glu Phe Met Leu Asp Pro  
 35 40 45  
 Thr Met Ala Cys Cys Met Val Ser Thr Ser Lys Pro Ala Trp Lys Ser  
 50 55 60  
 Ser Leu Ser Ser Leu Gln Tyr Ser Lys Ser Leu Thr Ser Leu Pro  
 65 70 75 80  
 Ala Ser Ala Thr Arg Ala Val Pro Thr Asn Ile Ser Ser Thr Leu His  
 85 90 95  
 Arg Ser Ser Ala Met Pro Phe Ser Met Glu Leu Gly Thr Leu Phe  
 100 105 110

<210> 414  
 <211> 660  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 414  
 aagcacttgg ccggcagcga acatatcttc gatcatcatt tcgcctttct tgctgctatt 60  
 gacctccaga ttcagtcgcc agccatagct agccacatcc gagttcgcgg taccggttgc 120  
 tccgtctttg taccacttca ccgggttttg gctaataagc cgaatattcc tggtcacgct 180  
 accgaatgtg gagttcgcc ctgttgatcat ggtttgggct gtgagggcgt tgcgggtcgat 240  
 ggttgggta ctgtttgcgc tttcgccctt ggtctggcga tcccagatac catagagcgt 300  
 catggctcgg ctggtatcgg cctgagcgtc atcgtcctcg aagtattttc ctgtacctac 360  
 gatgacgatg tagcccttac ggctaggatg gcgtaccaag gtaggcggag ccgtgatggg 420  
 ctgacgagta ttgtgtcgg cgcgagcacg gaaaagcggg gcgccgctga acgatactct 480  
 gaaagcagaa ggatctacat ctccgggctt gaagggattg atagaggtat ttgtgtctgg 540  
 gtcgtcgttg cgggtattgc cgatcaaadc gaagcgccag atatttcctt gcagatcgcc 600  
 agcataggcg tagtcagcaa tgccatcgct gttgttatca gccaggcgag gcgtcgatag 660

<210> 415  
 <211> 219  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 415  
 Lys His Leu Ala Gly Ser Glu His Ile Phe Asp His His Phe Ala Phe  
 1 5 10 15  
 Leu Ala Ala Ile Asp Leu Gln Ile Gln Ser Pro Ala Ile Ala Ser His  
 20 25 30  
 Ile Arg Val Arg Gly Thr Gly Cys Ser Val Phe Val Pro Leu His Arg  
 35 40 45  
 Val Leu Ala Asn Lys Pro Asn Ile Pro Val His Ala Thr Glu Cys Gly  
 50 55 60  
 Val Arg Leu Cys Cys His Gly Leu Gly Cys Glu Gly Val Ala Val Asp  
 65 70 75 80  
 Gly Trp Gly Thr Val Cys Ala Phe Ala Leu Gly Leu Ala Ile Pro Asp  
 85 90 95  
 Thr Ile Glu Arg His Gly Ser Ala Gly Ile Gly Leu Ser Val Ile Val  
 100 105 110

Leu	Glu	Val	Phe	Ser	Cys	Thr	Tyr	Asp	Asp	Asp	Val	Ala	Leu	Thr	Ala
		115					120					125			
Arg	Met	Ala	Tyr	Gln	Gly	Arg	Arg	Ser	Arg	Asp	Gly	Leu	Thr	Ser	Ile
	130					135					140				
Val	Val	Gly	Ala	Ser	Thr	Glu	Lys	Arg	Gly	Ala	Ala	Glu	Arg	Tyr	Ser
145					150					155					160
Glu	Ser	Arg	Arg	Ile	Tyr	Ile	Ser	Gly	Leu	Glu	Gly	Ile	Asp	Arg	Gly
				165					170					175	
Ile	Cys	Val	Trp	Val	Val	Val	Ala	Gly	Ile	Ala	Asp	Gln	Ile	Glu	Ala
		180						185					190		
Pro	Asp	Ile	Ser	Leu	Gln	Ile	Ala	Ser	Ile	Gly	Val	Val	Ser	Asn	Ala
	195					200						205			
Ile	Ala	Val	Val	Ile	Ser	Gln	Ala	Arg	Arg	Arg					
	210					215									

<210> 416  
 <211> 327  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 416	
ccggcgagtc ctgttggttg acacgggttg gcaagcgata tgtctgcca tcgactacta	60
ccagaccggc ggcaggatga acatcctcga ccacgcccac attctcgaac gtattcgtgg	120
cactcaaggc aaagggttgg caagccagag ctagagctgc aagagctgtg gcgagaagac	180
gtaaggggtt catgttcatt tctcctcgac gacccgccag gtttgcgtc cgttactctt	240
gtcgtctggg ttgaagatga tgcactcatc accagtgcaa gcctcggatt gacgctgttc	300
gttctgggta atggccaagc cacctag	327

<210> 417  
 <211> 108  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 417	
Pro Ala Ser Pro Val Val Gly His Gly Trp Ala Ser Asp Met Ser Ala	
1 5 10 15	
His Arg Leu Leu Pro Asp Arg Arg Gln Asp Glu His Pro Arg Pro Arg	
20 25 30	
Pro His Ser Arg Thr Tyr Ser Trp His Ser Arg Gln Arg Leu Gly Lys	
35 40 45	
Pro Glu Leu Glu Leu Gln Glu Leu Trp Arg Glu Asp Val Arg Gly Ser	
50 55 60	
Cys Ser Phe Leu Leu Asp Asp Pro Pro Gly Leu Ser Ser Val Thr Leu	
65 70 75 80	
Val Ala Gly Val Glu Asp Asp Ala Leu Ile Thr Ser Ala Ser Leu Gly	
85 90 95	
Leu Thr Leu Phe Val Leu Gly Asn Gly Gln Ala Thr	
100 105	

<210> 418  
 <211> 879  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 418	
gtggcttggc cattaccag aacgaacagc gtcaatccga ggcttgact ggtgatgagt	60
gcatcatctt caacccagc gacaagagta acggacgaca aacctggcgg gtcgtcgagg	120

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agaaatgaac atgaaccctt tacgtcttct cgccacagct cttgcagctc tagctctggc 180
ttgccaacc tttgccttga gtgccacgaa tacgttcgag aatgtgggcg tggtcgagga 240
tggtcatcct gccgccggtc tggtagtagt cgatgggcag acatatcgct tgccaaccg 300
tgtccaacaa caggactcgc cggatcatatt cttggtacgt cagggacaga cagtgtcttt 360
ctccggcaaa ctcaccagcg acctgccaga aatcgagtcg ttctacatta tcaagcaggc 420
ccctctcggt cccttcggat cggagcagca acaatgaagt cgaacagagg cttcactctc 480
atcgagttga tgatcgtcgt agtaatcatc gctattcttg ctggtatcgc ctacccagc 540
tacgacgaat acgtgaagcg cgggaatcgc accgaaggac aggcattact cagcgaagca 600
gccgctactc aagagcgcta tttttcacag aacaatactt atatcactac ccaagccgac 660
atcggcaagc tgcataatgcg caacacatcg ggcaccacag tgaagtcctc cacaggcaaa 720
tacagcctta ccgtcgatac ggtagccaac gacggagggt atcgcttat cgctaaccag 780
gcattcaacg atcttgattg tggcaacctg accttgaccg ccaacggcga gaaaggccgg 840
actggaagca agaagagcgt tgcagaatgc tggcgctaa 879

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<210> 419  
 <211> 292  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

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<400> 419
Val Ala Trp Pro Leu Pro Arg Thr Asn Ser Val Asn Pro Arg Leu Ala
 1          5          10          15
Leu Val Met Ser Ala Ser Ser Ser Thr Pro Ala Thr Arg Val Thr Asp
          20          25          30
Asp Lys Pro Gly Gly Ser Ser Arg Arg Asn Glu His Glu Pro Leu Thr
          35          40          45
Ser Ser Arg His Ser Ser Cys Ser Ser Ser Ser Gly Leu Pro Asn Leu
          50          55          60
Cys Leu Glu Cys His Glu Tyr Val Arg Glu Cys Gly Arg Gly Arg Gly
          65          70          75          80
Cys Ser Ser Cys Arg Arg Ser Gly Ser Ser Arg Trp Ala Asp Ile Ser
          85          90          95
Leu Ala Gln Pro Cys Pro Thr Thr Gly Leu Ala Gly His Ile Leu Gly
          100          105          110
Thr Ser Gly Thr Asp Ser Val Phe Leu Arg Gln Thr His Gln Arg Pro
          115          120          125
Ala Arg Asn Arg Val Val Leu His Tyr Gln Ala Gly Pro Ser Arg Ser
          130          135          140
Leu Arg Ile Gly Ala Ala Thr Met Lys Ser Asn Arg Gly Phe Thr Leu
          145          150          155          160
Ile Glu Leu Met Ile Val Val Val Ile Ile Ala Ile Leu Ala Gly Ile
          165          170          175
Ala Tyr Pro Ser Tyr Asp Glu Tyr Val Lys Arg Gly Asn Arg Thr Glu
          180          185          190
Gly Gln Ala Leu Leu Ser Glu Ala Ala Ala Thr Gln Glu Arg Tyr Phe
          195          200          205
Ser Gln Asn Asn Thr Tyr Ile Thr Thr Gln Ala Asp Ile Gly Lys Leu
          210          215          220
His Met Arg Asn Thr Ser Gly Thr Thr Val Lys Ser Ser Thr Gly Lys
          225          230          235          240
Tyr Ser Leu Thr Val Asp Thr Val Ala Asn Asp Gly Gly Tyr Arg Leu
          245          250          255
Ile Ala Asn Gln Ala Phe Asn Asp Leu Asp Cys Gly Asn Leu Thr Leu
          260          265          270
Thr Ala Asn Gly Glu Lys Gly Arg Thr Gly Ser Lys Lys Ser Val Ala
          275          280          285
Glu Cys Trp Arg
          290

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<210> 420  
 <211> 366  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 420  
 cggacgacaa acctggcggg tcgtcgagga gaaatgaaca tgaacccctt acgtcttctc 60  
 gccacagctc ttgcagctct agctctggct tgcccaacct ttgccttgag tgccacgaat 120  
 acgttcgaga atgtgggcgt ggtcgaggat gttcatcctg ccgccggtct ggtagtagtc 180  
 gatgggcaga catatcgctt gccaaccgt gtccaacaac aggactcgcc ggtcatattc 240  
 ttggtacgtc agggacagac agtgtctttc tccggcaaac tcaccagcga cctgccagaa 300  
 atcgagtcgt tctacattat caagcaggcc cctctcggtc ccttcggatc ggagcagcaa 360  
 caatga 366

<210> 421  
 <211> 121  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 421  
 Arg Thr Thr Asn Leu Ala Gly Arg Arg Gly Glu Met Asn Met Asn Pro  
 1 5 10 15  
 Leu Arg Leu Leu Ala Thr Ala Leu Ala Ala Leu Ala Leu Ala Cys Pro  
 20 25 30  
 Thr Phe Ala Leu Ser Ala Thr Asn Thr Phe Glu Asn Val Gly Val Val  
 35 40 45  
 Glu Asp Val His Pro Ala Ala Gly Leu Val Val Val Asp Gly Gln Thr  
 50 55 60  
 Tyr Arg Leu Pro Asn Arg Val Gln Gln Gln Asp Ser Pro Val Ile Phe  
 65 70 75 80  
 Leu Val Arg Gln Gly Gln Thr Val Ser Phe Ser Gly Lys Leu Thr Ser  
 85 90 95  
 Asp Leu Pro Glu Ile Glu Ser Phe Tyr Ile Ile Lys Gln Ala Pro Leu  
 100 105 110  
 Val Pro Phe Gly Ser Glu Gln Gln Gln  
 115 120

<210> 422  
 <211> 303  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 422  
 agcctctgtt cgacttcatt gttgctgctc cgatccgaag ggaacgagag gggcctgctt 60  
 gataatgtag aacgactcga tttctggcag gtcgctgggt agtttgccgg agaaagacac 120  
 tgtctgtccc tgacgtacca agaatatgac cggcgagtcc tgttgttga cacggttggg 180  
 caagcgatat gtctgcccac cgactactac cagaccggcg gcaggatgaa catcctcgac 240  
 cagcccaca ttctcgaacg tattcgtggc actcaaggca aaggttgggc aagccagagc 300  
 tag 303

<210> 423  
 <211> 100  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 423  
 Ser Leu Cys Ser Thr Ser Leu Leu Leu Arg Ser Glu Gly Asn Glu  
 1 5 10 15

Arg Gly Leu Leu Asp Asn Val Glu Arg Leu Asp Phe Trp Gln Val Ala  
                   20                  25                  30  
 Gly Glu Phe Ala Gly Glu Arg His Cys Leu Ser Leu Thr Tyr Gln Glu  
           35                  40                  45  
 Tyr Asp Arg Arg Val Leu Leu Asp Thr Val Gly Gln Ala Ile Cys  
       50                  55                  60  
 Leu Pro Ile Asp Tyr Tyr Gln Thr Gly Gly Arg Met Asn Ile Leu Asp  
 65                  70                  75                  80  
 His Ala His Ile Leu Glu Arg Ile Arg Gly Thr Gln Gly Lys Gly Trp  
                   85                  90                  95  
 Ala Ser Gln Ser  
                   100

<210> 424  
 <211> 507  
 <212> DNA  
 <213> *Pseudomonas aeruginosa*

<400> 424  
 tcgatgggca gacatatcgc ttgcccgaacc gtgtccaaca acaggactcg ccggtcatat 60  
 tcttggtacg tcaggggacag acagtgtcctt tctccggcaa actcaccagc gacctgccag 120  
 aaatcgagtc gttctacatt atcaagcagg cccctctcgt tcccttcgga tcggagcagc 180  
 aacaatgaag tcgaacagag gcttcactct catcgagttg atgatcgtcg tagtaatcat 240  
 cgctattcctt gctggtatcg cctaccccag ctacgacgaa tacgtgaagc gcgggaatcg 300  
 caccgaagga caggcattac tcagcgaagc agccgctact caagagcgct atttttcaca 360  
 gaacaatact tatatcacta cccaagccga catcggaag ctgcatatgc gcaacacatc 420  
 gggcaccaca gtgaagtcct ccacaggcaa atacagcctt accgtcgata cggtagccaa 480  
 cgacggaggt tatcgcctta tcgctaa 507

<210> 425  
 <211> 168  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 425  
 Ser Met Gly Arg His Ile Ala Cys Pro Thr Val Ser Asn Asn Arg Thr  
   1                  5                  10                  15  
 Arg Arg Ser Tyr Ser Trp Tyr Val Arg Asp Arg Gln Cys Leu Ser Pro  
           20                  25                  30  
 Ala Asn Ser Pro Ala Thr Cys Gln Lys Ser Ser Arg Ser Thr Leu Ser  
           35                  40                  45  
 Ser Arg Pro Leu Ser Phe Pro Ser Asp Arg Ser Ser Asn Asn Glu Val  
   50                  55                  60  
 Glu Gln Arg Leu His Ser His Arg Val Asp Asp Arg Arg Ser Asn His  
 65                  70                  75                  80  
 Arg Tyr Ser Cys Trp Tyr Arg Leu Pro Gln Leu Arg Arg Ile Arg Glu  
           85                  90                  95  
 Ala Arg Glu Ser His Arg Arg Thr Gly Ile Thr Gln Arg Ser Ser Arg  
           100                  105                  110  
 Tyr Ser Arg Ala Leu Phe Phe Thr Glu Gln Tyr Leu Tyr His Tyr Pro  
           115                  120                  125  
 Ser Arg His Arg Gln Ala Ala Tyr Ala Gln His Ile Gly His His Ser  
   130                  135                  140  
 Glu Val Leu His Arg Gln Ile Gln Pro Tyr Arg Arg Tyr Gly Ser Gln  
 145                  150                  155                  160  
 Arg Arg Arg Leu Ser Pro Tyr Arg  
                   165

<210> 426  
 <211> 414  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 426  
 gtggggggcg tcggaagagc aggaactgga gggacgggag gagaacatta ccttctcgat 60  
 gcccaaggaa ctgcgggtca aggctttgta atcggaattt ttgcgcacct gaaaaagccc 120  
 ggcttatgcc gggctttgcc tttttcttgt ctccggcgctt tagcgccagc attctgcaac 180  
 gctcttcttg cttccagtcg ggcctttctc gccgttggcg gtcaagggtca ggttgccaca 240  
 atcaagatcg ttgaatgcct ggtagcgat aaggcgataa cctccgtcgt tggctaccgt 300  
 atcgacggta aggctgtatt tgcctgtgga ggacttcact gtggtgcccg atgtgttgcg 360  
 catatgcagc ttgccgatgt cggcttgggt agtgatataa gtattgttct gtga 414

<210> 427  
 <211> 137  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 427  
 Val Gly Gly Val Gly Arg Ala Gly Thr Gly Gly Thr Gly Gly Glu His  
 1 5 10 15  
 Tyr Leu Leu Asp Ala Gln Gly Thr Ala Gly Gln Gly Phe Val Ile Gly  
 20 25 30  
 Ile Phe Ala His Leu Lys Lys Pro Gly Leu Cys Arg Ala Leu Pro Phe  
 35 40 45  
 Ser Cys Leu Gly Ala Leu Ala Pro Ala Phe Cys Asn Ala Leu Leu Ala  
 50 55 60  
 Ser Ser Pro Ala Phe Leu Ala Val Gly Gly Gln Gly Gln Val Ala Thr  
 65 70 75 80  
 Ile Lys Ile Val Glu Cys Leu Val Ser Asp Lys Ala Ile Thr Ser Val  
 85 90 95  
 Val Gly Tyr Arg Ile Asp Gly Lys Ala Val Phe Ala Cys Gly Gly Leu  
 100 105 110  
 His Cys Gly Ala Arg Cys Val Ala His Met Gln Leu Ala Asp Val Gly  
 115 120 125  
 Leu Gly Ser Asp Ile Ser Ile Val Leu  
 130 135

<210> 428  
 <211> 1050  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 428  
 tcgacgtcca gccggcctga accgtcggtc gctgcgcctt tcccaagcgg ggaggcggt 60  
 agcaagggttc attcgtccaa tcaccgcgtc gccacgaga ccgcatgca aatcaaactc 120  
 gccaatcccc gcggtctctg cgccggcggt gatcgcgcca tcgagatcgt caaccgtgcc 180  
 ctcgatgtct tcggcccgcc gatctacgtg cgtcacgagg tgggtcacaa caagttcgtc 240  
 gtggacaacc tgcgccagcg cggcgccatc ttctcgagg aactcgatca ggtgcccggac 300  
 aacgtcatcg tcattctcag cgcccacggc gtttcccagg cggtcgcgaa ggaagccgag 360  
 gggcgcgggc tgaagggttt cgacgcgacc tgcccgtggt tgaccaaggt gcacatggaa 420  
 gtggtgctgt acagccgcga cggccacgaa tgcgtgctga tcgggcatga aggccacccc 480  
 gaggtggaag gcaccatggg ccagtacgat gccagcaacg gcggtgccat ctacctggtg 540  
 gaggacgagg ccgacgtcgc cgcgctggag gtgcgcaagc ccgaagccct gcactacgtg 600  
 acccagacca ccctgtcgat ggacgacacc tcgaagggtc tcgatgcctt gcgcgccaa 660  
 ttcccgacga tccagggggc gcgcaagaac gacatctgct atgccacca gaaccgccag 720  
 gatgccgtga aggaactggc cgaccagtgc gacatggtcc tgggtggtgg cagccccaac 780

```

agttccaact ccaaccgcct ggcggaactc gccgagcgca tgggcacgcc ggcctacctg      840
atcgacggcg cccaggacat gcaacgcggc tggttcgacg gtgtgcgtcg catcggaatc      900
accgcaggcg cctccgcgcc ggaagtgctg gtgcgcggag tgatcgccca gctacgtgag      960
tggggggcgt cggaagagca ggaactggag ggacgggagg agaacattac cttctcgatg     1020
cccaaggaac tgcgggtcaa ggctttgtaa                                     1050

```

<210> 429  
 <211> 349  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

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<400> 429
Ser Thr Ser Ser Arg Pro Glu Pro Ser Val Ala Ala Pro Phe Pro Ser
 1          5          10          15
Gly Glu Gly Gly Ser Lys Val His Ser Ser Asn His Arg Val Ala His
 20          25          30
Glu Thr Ala Met Gln Ile Lys Leu Ala Asn Pro Arg Gly Phe Cys Ala
 35          40          45
Gly Val Asp Arg Ala Ile Glu Ile Val Asn Arg Ala Leu Asp Val Phe
 50          55          60
Gly Pro Pro Ile Tyr Val Arg His Glu Val Val His Asn Lys Phe Val
 65          70          75          80
Val Asp Asn Leu Arg Gln Arg Gly Ala Ile Phe Val Glu Glu Leu Asp
 85          90          95
Gln Val Pro Asp Asn Val Ile Val Ile Phe Ser Ala His Gly Val Ser
 100         105         110
Gln Ala Val Arg Lys Glu Ala Glu Gly Arg Gly Leu Lys Val Phe Asp
 115         120         125
Ala Thr Cys Pro Leu Val Thr Lys Val His Met Glu Val Val Arg Tyr
 130         135         140
Ser Arg Asp Gly His Glu Cys Val Leu Ile Gly His Glu Gly His Pro
 145         150         155         160
Glu Val Glu Gly Thr Met Gly Gln Tyr Asp Ala Ser Asn Gly Gly Ala
 165         170         175
Ile Tyr Leu Val Glu Asp Glu Ala Asp Val Ala Ala Leu Glu Val Arg
 180         185         190
Lys Pro Glu Ala Leu His Tyr Val Thr Gln Thr Thr Leu Ser Met Asp
 195         200         205
Asp Thr Ser Lys Val Ile Asp Ala Leu Arg Ala Lys Phe Pro Gln Ile
 210         215         220
Gln Gly Pro Arg Lys Asn Asp Ile Cys Tyr Ala Thr Gln Asn Arg Gln
 225         230         235         240
Asp Ala Val Lys Glu Leu Ala Asp Gln Cys Asp Met Val Leu Val Val
 245         250         255
Gly Ser Pro Asn Ser Ser Asn Ser Asn Arg Leu Arg Glu Leu Ala Glu
 260         265         270
Arg Met Gly Thr Pro Ala Tyr Leu Ile Asp Gly Ala Glu Asp Met Gln
 275         280         285
Arg Gly Trp Phe Asp Gly Val Arg Arg Ile Gly Ile Thr Ala Gly Ala
 290         295         300
Ser Ala Pro Glu Val Leu Val Arg Gly Val Ile Ala Gln Leu Arg Glu
 305         310         315         320
Trp Gly Ala Ser Glu Glu Gln Glu Leu Glu Gly Arg Glu Glu Asn Ile
 325         330         335
Thr Phe Ser Met Pro Lys Glu Leu Arg Val Lys Ala Leu
 340         345

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<210> 430

<211> 489  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 430  
 aggccacccc gaggtggaag gcaccatggg ccagtagcat gccagcaacg gcggtgccat 60  
 ctacctggtg gaggacgagg ccgacgtcgc cgcgctggag gtgcgcaagc ccgaagccct 120  
 gcactacgtg acccagacca ccctgtcgat ggacgacacc tcgaagggtca tcgatgccct 180  
 gcgcgccaag ttcccgcaga tccagggggc gcgcaagaac gacatctgct atgccaccca 240  
 gaaccgccag gatgccgtga aggaactggc cgaccagtgc gacatgggcc tgggtgggtgg 300  
 cagccccaac agttccaact ccaaccgcct gcgcgaactc gccgagcgca tgggcacgcc 360  
 ggccctacctg atcgacggcg ccgaggacat gcaacgcggc tggttcgacg gtgtgcgtcg 420  
 catcggaatc accgcaggcg cctccgcgcc ggaagtgtcg gtgcgaggag tgatcgccca 480  
 gctacgtga 489

<210> 431  
 <211> 162  
 <212> PRT  
 <213> Pseudomonas aeruginosa

<400> 431  
 Arg Pro Pro Arg Gly Gly Arg His His Gly Pro Val Arg Cys Gln Gln  
 1 5 10 15  
 Arg Arg Cys His Leu Pro Gly Gly Gly Arg Gly Arg Arg Arg Ala  
 20 25 30  
 Gly Gly Ala Gln Ala Arg Ser Pro Ala Leu Arg Asp Pro Asp His Pro  
 35 40 45  
 Val Asp Gly Arg His Leu Glu Gly His Arg Cys Pro Ala Arg Gln Val  
 50 55 60  
 Pro Ala Asp Pro Gly Ala Ala Gln Glu Arg His Leu Leu Cys His Pro  
 65 70 75 80  
 Glu Pro Pro Gly Cys Arg Glu Gly Thr Gly Arg Pro Val Arg His Gly  
 85 90 95  
 Pro Gly Gly Gly Gln Pro Gln Gln Phe Gln Leu Gln Pro Pro Ala Arg  
 100 105 110  
 Thr Arg Arg Ala His Gly His Ala Gly Leu Pro Asp Arg Arg Arg Arg  
 115 120 125  
 Gly His Ala Thr Arg Leu Val Arg Arg Cys Ala Ser His Arg Asn His  
 130 135 140  
 Arg Arg Arg Leu Arg Ala Gly Ser Ala Gly Ala Arg Ser Asp Arg Pro  
 145 150 155 160  
 Ala Thr

<210> 432  
 <211> 951  
 <212> DNA  
 <213> Pseudomonas aeruginosa

<400> 432  
 ctgggcgatc actccgcgca ccagcacttc cggcgcggag gcgcctgcgg tgattccgat 60  
 gcgacgcaca ccgtcgaacc agccgcgttg catgtcctcg gcgccgtcga tcaggtaggc 120  
 cggcgtgccc atgcgctcgg cgagttcgcg caggcggttg gagttggaac tgttggggct 180  
 gccaccacc aggaccatgt cgactgggtc ggccagttcc ttcacggcat cctggcggtt 240  
 ctgggtggca tagcagatgt cgttcttgcg cggcccctgg atctgcggga acttggcgcg 300  
 cagggcatcg atgaccttcg aggtgtcgtc catcgacagg gtggtctggg tcacgtagt 360  
 cagggcttcg ggcttgcgca cctccagcgc ggcgacgtcg gcctcgtcct ccaccaggta 420  
 gatggcaccg ccgttgcttg catcgtactg gcccatggtg ccttcacact cgggggtggc 480

ttcatgccccg	atcagcacgc	attcgtggcc	gtcgcggctg	tagcgcacca	cttccatgtg	540
caccttgggtc	accagcgggc	aggtcgcgtc	gaaaaccttc	aggccgcgcc	cctcggcttc	600
cttgccggacc	gcctgggaaa	cgccgtgggc	gctgaagatg	acgatgacgt	tgtccggcac	660
ctgatcgagt	tcctcgacga	agatggcgcc	gcgctggcgc	aggttgtcca	cgacgaactt	720
gttgtgcacc	acctcgtgac	gcacgtagat	cggcggggccg	aagacatcga	gggcacggtt	780
gacgatctcg	atggcgcgat	ccacgccggc	gcagaagccg	cggggattgg	cgagtttgat	840
ttgcatggcg	gtctcgtggg	cgacgcggtg	attggacgaa	tgaaccttgc	taccgccctc	900
cccgttggg	aagggcgcag	cgaccgacgg	ttcaggcccg	ctggacgtcg	a	951

<210> 433  
 <211> 317  
 <212> PRT  
 <213> *Pseudomonas aeruginosa*

<400> 433

Leu	Gly	Asp	His	Ser	Ala	His	Gln	His	Phe	Arg	Arg	Gly	Gly	Ala	Cys
1				5					10					15	
Gly	Asp	Ser	Asp	Ala	Thr	His	Thr	Val	Glu	Pro	Ala	Ala	Leu	His	Val
			20					25					30		
Leu	Gly	Ala	Val	Asp	Gln	Val	Gly	Arg	Arg	Ala	His	Ala	Leu	Gly	Glu
			35				40					45			
Phe	Ala	Gln	Ala	Val	Gly	Val	Gly	Thr	Val	Gly	Ala	Ala	His	His	Gln
			50				55				60				
Asp	His	Val	Ala	Leu	Val	Gly	Gln	Phe	Leu	His	Gly	Ile	Leu	Ala	Val
65					70				75						80
Leu	Gly	Gly	Ile	Ala	Asp	Val	Val	Leu	Ala	Arg	Pro	Leu	Asp	Leu	Arg
				85					90					95	
Glu	Leu	Gly	Ala	Gln	Gly	Ile	Asp	Asp	Leu	Arg	Gly	Val	Val	His	Arg
			100					105					110		
Gln	Gly	Gly	Leu	Gly	His	Val	Val	Gln	Gly	Phe	Gly	Leu	Ala	His	Leu
			115				120					125			
Gln	Arg	Gly	Asp	Val	Gly	Leu	Val	Leu	His	Gln	Val	Asp	Gly	Thr	Ala
						135					140				
Val	Ala	Gly	Ile	Val	Leu	Ala	His	Gly	Ala	Phe	His	Leu	Gly	Val	Ala
145					150					155					160
Phe	Met	Pro	Asp	Gln	His	Ala	Phe	Val	Ala	Val	Ala	Ala	Val	Ala	His
				165					170					175	
His	Phe	His	Val	His	Leu	Gly	His	Gln	Arg	Ala	Gly	Arg	Val	Glu	Asn
			180					185					190		
Leu	Gln	Ala	Ala	Pro	Leu	Gly	Phe	Leu	Ala	Asp	Arg	Leu	Gly	Asn	Ala
			195				200					205			
Val	Gly	Ala	Glu	Asp	Asp	Asp	Asp	Val	Val	Arg	His	Leu	Ile	Glu	Phe
			210			215					220				
Leu	Asp	Glu	Asp	Gly	Ala	Ala	Leu	Ala	Gln	Val	Val	His	Asp	Glu	Leu
225					230				235						240
Val	Val	His	His	Leu	Val	Thr	His	Val	Asp	Arg	Arg	Ala	Glu	Asp	Ile
				245					250					255	
Glu	Gly	Thr	Val	Asp	Asp	Leu	Asp	Gly	Ala	Ile	His	Ala	Gly	Ala	Glu
			260					265					270		
Ala	Ala	Gly	Ile	Gly	Glu	Phe	Asp	Leu	His	Gly	Gly	Leu	Val	Gly	Asp
			275				280					285			
Ala	Val	Ile	Gly	Arg	Met	Asn	Leu	Ala	Thr	Ala	Leu	Pro	Ala	Trp	Glu
			290			295					300				
Gly	Arg	Ser	Asp	Arg	Arg	Phe	Arg	Pro	Ala	Gly	Arg	Arg			
305					310					315					

<210> 434  
 <211> 321

<212> DNA  
<213> *Pseudomonas aeruginosa*

<400> 434  
ccttcgaggt gtcgtccatc gacaggggtg tctgggtcac gtagtgcagg gcttcgggct 60  
tgcgcacctc cagcgcggcg acgtcggcct cgctctccac caggtagatg gcaccgccgt 120  
tgctggcatc gtactggccc atggtgcctt ccacctcggg gtggccttca tgcccgatca 180  
gcacgcattc gtggccgtcg cggctgtagc gcaccacttc catgtgcacc ttggtcacca 240  
gcgggcaggt cgcgtcgaaa accttcaggc cgcgcccttc ggcttccttg cggaccgcct 300  
gggaaacgcc gtgggcgctg a 321

<210> 435  
<211> 106  
<212> PRT  
<213> *Pseudomonas aeruginosa*

<400> 435  
Pro Ser Arg Cys Arg Pro Ser Thr Gly Trp Ser Gly Ser Arg Ser Ala  
1 5 10 15  
Gly Leu Arg Ala Cys Ala Pro Pro Ala Arg Arg Arg Pro Arg Pro  
20 25 30  
Pro Pro Gly Arg Trp His Arg Arg Cys Trp His Arg Thr Gly Pro Trp  
35 40 45  
Cys Leu Pro Pro Arg Gly Gly Leu His Ala Arg Ser Ala Arg Ile Arg  
50 55 60  
Gly Arg Arg Gly Cys Ser Ala Pro Leu Pro Cys Ala Pro Trp Ser Pro  
65 70 75 80  
Ala Gly Arg Ser Arg Arg Lys Pro Ser Gly Arg Ala Pro Arg Leu Pro  
85 90 95  
Cys Gly Pro Pro Gly Lys Arg Arg Gly Arg  
100 105

<210> 436  
<211> 408  
<212> DNA  
<213> *Pseudomonas aeruginosa*

<400> 436  
caaggttcat tgcgtccaatc accgcgtcgc ccacgagacc gccatgcaaa tcaaactcgc 60  
caatccccgc ggcttctgcg ccggcgtgga tcgcgccatc gagatcgta accgtgccct 120  
cgatgtcttc ggcccgcgga tctacgtgcg tcacgagggtg gtgcacaaca agttcgtcgt 180  
ggacaacctg cgccagcgcg gcgccatctt cgtcgaggaa ctcgatcagg tgccggacaa 240  
cgtcatcgtc atcttcagcg ccacggcgt ttcccaggcg gtccgcaagg aagccgaggg 300  
gcgcggcctg aagggttttcg acgcgacctg cccgctgggtg accaagggtgc acatggaagt 360  
ggtgcgctac agccgcgacg gccacgaatg cgtgctgac gggcatga 408

<210> 437  
<211> 135  
<212> PRT  
<213> *Pseudomonas aeruginosa*

<400> 437  
Gln Gly Ser Phe Val Gln Ser Pro Arg Arg Pro Arg Asp Arg His Ala  
1 5 10 15  
Asn Gln Thr Arg Gln Ser Pro Arg Leu Leu Arg Arg Arg Gly Ser Arg  
20 25 30  
His Arg Asp Arg Gln Pro Cys Pro Arg Cys Leu Arg Pro Ala Asp Leu  
35 40 45

Arg	Ala	Ser	Arg	Gly	Gly	Ala	Gln	Gln	Val	Arg	Arg	Gly	Gln	Pro	Ala
50						55						60			
Pro	Ala	Arg	Arg	His	Leu	Arg	Arg	Gly	Thr	Arg	Ser	Gly	Ala	Gly	Gln
65					70					75					80
Arg	His	Arg	His	Leu	Gln	Arg	Pro	Arg	Arg	Phe	Pro	Gly	Gly	Pro	Gln
				85					90					95	
Gly	Ser	Arg	Gly	Ala	Arg	Pro	Glu	Gly	Phe	Arg	Arg	Asp	Leu	Pro	Ala
			100					105					110		
Gly	Asp	Gln	Gly	Ala	His	Gly	Ser	Gly	Ala	Leu	Gln	Pro	Arg	Arg	Pro
		115					120					125			
Arg	Met	Arg	Ala	Asp	Arg	Ala									
130						135									